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ADDRESS.

AN ADDRESS.

Delivered before the Gynecological Society of Boston, Jan. 9, 1896.

BY JESSE F. FRISBIE, M.D.

NEWTON, MASS.

Ladies and Gentlemen:—As president, it becomes my privilege and pleasure to welcome the members of the Gynecological Society of Boston, and the assembled guests, to the celebration of the twenty-seventh anniversary of its foundation. Most heartily do I congratulate the members of the society on this auspicious occasion, and in their name do I give glad welcome to our guests.

On the evening of Jan. 22, 1869, eight medical gentlemen met at Hotel Pelham, in this city, and organized the first distinctive society for the scientific study and investigation of the diseases peculiar to females, and christened it the Gynecological Society of Boston. I say the first society of its kind for, as far as I know, it was the first gynecologic society formed in this country or Europe. At the time it was organized there was not in the medical schools a recognized department of gynecology. Whatever work was done, whatever instruction was given in this direction, was largely by obstetricians. Obstetrics and diseases of women were classed together and taught by the same professors. The following is the simple preamble: "The undersigned, desirous of advancing the study and treatment of diseases of women, hereby associate themselves together with that intent, and adopt for their government the appended constitution and by-laws." This was signed by George H. Bixby, Samuel L. Dutton, H. M. Field, Winslow Lewis, John C. Sharp, Horatio R. Storer, Levi F. Warner, William G. Wheeler.

The constitution and by-laws adopted were the simplest and conformed to the Code of Ethics: "This society recognizes the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION as binding upon its members," thus beginning its career with the expressed acceptance of the highest medical professional laws of this country.

The following gentlemen were elected officers: President, Dr. Winslow Lewis; Secretary, Dr. H. R. Storer; Treasurer, Dr. George H. Bixby; Committee on Membership, Dr. W. G. Wheeler, Dr. L. F. Warner, Dr. S. L. Dutton; Committee on Foreign Literature, Dr. J. C. Sharp, Dr. H. M. Field. And thus the Gynecological Society of Boston was organized and at once proceeded to the work for which these medical men had come together.

And now I deem it judicious and proper—a well-deserved tribute—that a few biographical words should be said here with reference to these gentlemen who have done so much for the advancement of gynecologic science.

Dr. Winslow Lewis, a graduate of Harvard and a student in Paris and London, was a trained surgeon and anatomist, a pupil of the late Dr. John C. Warren, connected by position on the consulting staffs with the Massachusetts General, the City and Carney Hospitals. He was the founder and for many years president of the Boylston Medical School, city physician of Boston, and in other respects a prominent professional man. He died in 1875.

Dr. George H. Bixby, South American by birth, educated in New England, followed by six years' professional study and practice in Europe, the latter part especially devoted to diseases of women. He was a man of fine literary and professional attainments.

Dr. Horatio R. Storer was one of the earliest and oldest students and instructors in gynecology. He was, in fact, the originator and real founder of the society. From his graduation he endeavored to bring into prominence the idea of special study and special work for the treatment of the diseases of women. He spent years of study in Europe and for a time was a special student with Sir James Simpson, of Edinburgh, and in conjunction with Sir Walter O. Priestly, edited his works. He was lecturer upon medical jurisprudence and obstetrics in the Birkshire Medical College, assistant instructor in Harvard Medical School, the first physician in America to give a complete collegiate course upon diseases of women. His connection with medical societies in this country and Europe, hospitals and State commissions are far too numerous to mention. Special honors have been conferred upon him from nearly all parts of the civilized world.

Dr. Levi F. Warner was a true-hearted, Christian physician; able, competent, skillful and always a genial companion, an honor to the profession and high manhood, respected and beloved. His honors were many and when, six years ago, he passed from the field of labor and entered into his eternal rest the world lost a great man full of honors and years, and we mourn one of our brightest and most steadfast friends. The world is better because he lived.

Dr. William G. Wheeler, a fellow student with Dr. Warner, whose kindly, genial spirit, coupled with his high professional abilities, have won for him the respect, esteem and almost veneration of all who know him. Honors have been his and it is cause for congratulation that he still abides with us.

Dr. Henry M. Field, professor in Dartmouth Medical College, one of the ablest therapeutists and most scholarly men in the medical profession—broken down through over-work—is now spending his declining years in the genial, sun-blessed climate of Southern California.

Of Dr. Samuel L. Dutton and Dr. John C. Sharp, the other two medical men among the original founders, I can only make brief mention. Their connection with this society was not long continued, and appa-

rently other professional duties prevented them from taking very active part in its work. Dr. Sharp died Sept. 22, 1890.

These were the founders of the Gynecological Society of Boston; strong, full-brained, skillful, scientific pioneers in this department of medicine and surgery, whose successes have added lasting glory and honor to the medical profession. As soon as the success of this society was an assured fact, as soon as there was demonstrated the great advantage, the need, yes, and the demand for separate and scientific instruction in this department, other gynecologic societies were organized, both local and national, in this country and Europe, and the medical colleges all over the civilized world hastened to establish professorships of gynecology. But the honor, the palm for the organization of the first society belongs to Boston and the few earnest, zealous, far-seeing and able men who founded this one. During these years—from 1869 to 1896—we have added many hundreds to our number of active, corresponding and honorary members. In this long list of names will be found nearly all the first gynecologists of two continents, men who conidered it an honor to hold such membership and the society was honored by the acceptance.

The great interest which these gentlemen—representative medical men in Europe and America—continue to have in this society is manifest in their appreciative and congratulatory replies to the invitations sent for this evening. In order that this society might exert a wider influence on the general practitioner, be of greater aid and advantage, especially to those medical men who have not had opportunities for special studies in gynecologic investigation and practice, it was decided to publish its proceedings under its own authority, and Dr. Lewis, Dr. Storer Dr. Bixby were elected editors of a monthly periodical called *The Journal of the Gynecological Society of Boston.* As a medium for the general dissemination of information pertaining to diseases of women it was a success from the beginning.

Since the organization of this society other medical men have become active members whose names bear a world-wide reputation, whose skill and remarkable successes are known and acknowledged on two continents, whose published works are standards with the foremost professional men everywhere. The founders can congratulate themselves on the fact, following its organization, influenced by its scope and work other societies were organized and gynecology bounded to the front and became a distinct and important specialty in college instruction, hospital and private practice. Well may this society take pride in its past achievements, in the grand work it has done and in the brilliant record made by its members.

With the honors and successes that have come to us during the years that are gone, we may look forward with bright anticipations to still greater triumphs in the future, to greater advances in gynecologic science, to greater aid in the comfort and cure of those suffering from disease, and posterity will gladly and freely give tribute to the fathers of this society in words of old: "Well done thou good and faithful servants."

Some of us show by the silvering hair the rapid passing years and the nearing of the time when we shall have accomplished our work.

While we labor on we may console ourselves with the thought so beautifully expressed by our dearly beloved poet, Oliver Wendell Holmes: "Where the snowflakes fall the thickest, there nothing can freeze."

The following gentlemen have been presidents of the society: Dr. Winslow Lewis, Dr. William G. Wheeler, Dr. Henry M. Field, Dr. W. S. Brown, Dr. J. C. Irish, Dr. J. F. Frisbie, Dr. Horatio R. Storer, Dr. Henry O. Marcy, Dr. H. C. White, Dr. A. P. Clarke.

ORIGINAL ARTICLES.

SOME REMARKS ON THE HISTORY OF THE GREATER EPIDEMICS OF THE PAST, AND THE MANNER OF TRANSMISSION.

Read before the Milwaukee Medical Society.

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It is only possible, during the few moments allotted to me at this time to refer, in the briefest possible manner, to some features of certain epidemics in the past. I shall only consider the four diseases which stand at the head of epidemics, namely, the plague, asiatic cholera, yellow fever and smallpox.

I.—THE BUBONIC PLAGUE.

This is a disease of great antiquity. The first extensive epidemic of which history has given us any definite account occurred in the sixth century, is described as "the plague of Justinian," and is said to have persisted during nearly the whole of that emperor's long reign. It probably originated in Lower Egypt in the year 542 A.D. It swept with increasing fury over Asia Minor; it also visited Constantinople with the result that for some days people died, so it is related, at the rate of 10,000 daily. For seventy years this disease raged in all parts of the then known world, and its victims were numbered by millions. In the fourteenth century it appeared under the name of the "black death" and is said to have destroyed 13,000,000 people in China, 24,000,000 in other Oriental countries, and not less than 25,000,000 people in Europe. The same disease is classed under the head of "the great plague of London" which occurred in 1665, when the total number of deaths is placed at 100,000. The same plague occurred at Marseilles and Toulon in 1720. Its last appearance in Europe was reported to be at Dalmatia and Turkey in 1840-41. The bubonic pest, however, has never ceased to exist in China, showing itself more or less frequently, and spreading from there, from time to time, to Persia, Arabia and Asiatic Russia. It is probable that for the past fifteen years it has continually existed in the southern part of China, and the recent outbreak there shows that its virulence is no less than existed formerly. According to the official reports for the six months from February to July, 1894, inclusive, in Canton, which has a population of about 1,000,000 there were 180,000 deaths. The official reports from the city of Hong-Kong up to August, 1894, showed that 2,504 deaths occurred from this disease out of a population of 200,000. It is, however, believed that as every Chinese man or woman, when seized with it, got over to the main land, if he or she possibly could, the actual number of deaths out of that population was probably much higher.

The death rate is simply enormous. Yersin places

it as high as 95 per cent. even in hospitals. In this recent outbreak the disease occurred among the Chinese principally, more especially among women and children, and among those who were the least able to resist the invasion of any disease. It was also observed that it raged worse among families living on the first floor of houses next to the ground, and that those living on the water, in many instances escaped, which leads us to believe that the condition of the soil has something to do with the spread of the disease.

From the investigations made by Kitasato and Yersin, there is no longer any doubt that the bacillus has been isolated by them and, thus far, they have been unable to observe that the bacillus has any spores. It is claimed that the bacillus enters the human body by three channels—through the respiratory and digestive tracts, and through an external wound. It seems to be a disease of poverty, and flourishes best in overcrowded localities where there is a lack of proper ventilation, personal cleanliness, and proper and sufficient diet. It is a typical infectious disease; a filth disease caused by a bacillus. There is no doubt that it has been and can be transmitted through merchandise, such as rags, and other material, that may be shipped from one place to another. Just how long the bacillus may live under certain conditions does not seem yet to have been demonstrated, but it is believed that it will live for a long period under favorable conditions. We do know, however, that it can be easily destroyed by the degree of temperature employed in disinfecting by live steam. It is probably transmitted by food, drink and air. Like cholera, it has followed the channels of commerce. In the recent outbreak it found its way from Yunan along the southern border of Kwangse to Pakhoi, from whence it traveled northward through the Kwang-tung province to Canton. From the latter city it was readily conveyed to Hong-Kong by persons removing while actually suffering from the disease, or during the period of incubation. It only requires about eight hours of time, by steamer, to pass between these two cities, and in the late epidemic it was quite common to have several deaths occur on the passage between these two points. According to Mr. Rocher, pigs, goats, rats and other animals, die in great numbers before man is affected, and it has been noted that a high mortality exists among these animals two or three weeks before cases of plague are noted in the human family. Just what the relationship may be in regard to this matter is a question not yet fully worked out or understood. Yersin has called attention to the results of his autopsies of animals, which showed that many dead flies were found. On examination of their bodies, he found them to contain the plague bacillus, and an inoculation of guinea pigs from such flies caused death within forty-eight hours with specific lesions of the disease. There is not much question that this disease may be carried to any part of the civilized world, and an outbreak in any locality should be watched very carefully by sanitary authorities.

II.—ASIATIC CHOLERA.

The history of epidemics of this disease, prior to the seventeenth and eighteenth centuries, is so imperfect that we can not depend very much upon it. Mention is made of it in the Sanscrit and Chinese writings; it is also spoken of by Hippocrates, Celsus, Galen and others, but we do not find a clear description of it, as existing epidemically, prior to the seventeenth century. Since then it has occurred as an epidemic in so many localities that it would be impossible to name them all. As long ago as 1768-71, Sonnerat described an epidemic in the neighborhood of Pondicherry which destroyed 60,000 lives. In what was then known as French India in 1780-81 it also prevailed, and we also have reports of epidemics occurring in Madras from the years 1774-82. The first really famous epidemic dates from Jessora in 1817, although it has been proved that other cholera epidemics existed in India prior to this. In 1817 in Jessora, a city some forty hours ride northeast from Calcutta, there existed a patient who had been seized in the night with violent vomiting and diarrhea. A local Indian physician called on an English physician, Dr. Robert Tytler, to see this patient. He found him moribund, and thought at first that it was a case of poisoning, but when he learned that some seventeen other cases had been attacked at the same time and had quickly died, he came to different conclusions. This was a case of genuine Asiatic cholera, and so rapidly did the epidemic spread that within two months, in the city of Jessora, more than 10,000 of the inhabitants had died. During this same year the disease prevailed throughout the whole of English India, reached Calcutta in September, and caused a heavy mortality. An army encamped on the banks of the Sind lost within a short time 764 officers and European soldiers and about 8,000 Sepoys. In the first year the number of cholera victims is given as 600,000. It is possible that this number is somewhat exaggerated, as statistics under such circumstances are unreliable, and were especially so at that early age. Cholera spread over all of Bengal in 1818, and it is reported that in Benares 15,000 persons died in two months. Epidemics spread northwardly, then westwardly, then southwardly along the coast of Coromandel, and out of 18,000 men composing General Hastings' army, stationed between Bombay and Calcutta, 9,000, or 50 per cent., died in a short time. In 1820, Bengal was again severely attacked and the epidemic penetrated to Cochin China, also to Canton. In 1821 the disease passed across the mouth of the Indus and spread itself along the coast of the Persian Gulf, whence it extended into the interior of the land. It soon appeared in Bagdad and other places. It spread also towards the East, sowing everywhere the greatest destruction, especially in Borneo and Java; the latter place is said to have lost 100,000 inhabitants. In 1823, Burmah and the Empire of China, the latter especially, were severely attacked with cholera, and about this time it showed itself for the first time on Russian soil. It spread in a westerly direction and invaded the Empire of Russia. In 1823 it penetrated the very borders of Europe. In the three following years cholera made but little progress in the two threatened divisions of the earth, Europe and Africa, and toward the close of the year 1826 the hope was cherished, says Lebert, that the epidemic was near its end, but as early as the beginning of 1827 it appeared with renewed intensity in Calcutta, and here is mentioned, for the first time, that many animals also showed the influence of the disease. In 1830 its advance toward the northeast was more positive than ever before. It soon again extended on the coast of the Caspian Sea: Orenburg, which had been already reached in the last months of 1829, was again attacked, and it is related one-tenth of the whole population was seized with cholera.

There is something peculiar in the mode of trans-

mission of this disease, inasmuch as in times past it seems to have encircled the world, when it has once started, before the pandemic has ceased. While it has been said to be a water-borne disease, there are some facts which hardly coincide with this theory, for we find it has traveled over mountains and through every part of the known world, apparently independent of water courses. Early in 1831 it appeared in Mecca and raged with great violence; later it appeared in Alexandria and Cairo; the latter place is said to have lost 30,000 people by it in the first months. In Egypt the disease penetrated up the Nile to the higher regions of this country. Constantinople was also attacked within this year, and Smyrna was seized and suffered very severely from it. It occurred in the same year in various parts of Russia, and on August 30 entered Berlin, where it caused 2,500 deaths among 200,000 inhabitants. In the northern part of Germany, at this time, it was observed to affect chickens, pigeons, and in many rivers fish perished in great numbers. In October it reached England and soon spread over the islands of Great Britain. The following March it reached Paris where it raged with extraordinary intensity, destroying one forty-third of the whole population. About the middle of 1832 it crossed the Atlantic Ocean and appeared in North America at Quebec and Montreal, traveling quickly from there to New York, Philadelphia and Baltimore, and as far south as New Orleans. In 1833 it invaded the Mexican States and was very severe in Vera Cruz and Mexico. Since that time the history is familiar to nearly every one. Its home is well known to be in India, where it is constantly present and from which place, when once started, it spreads to all parts of the world before it stops. It reached this country again in 1848, appearing first at New Orleans, and again in 1853–54, extending over a considerable portion of the United States. The next great epidemic in Europe persisted from 1865 to 1874, about ten years. Europe then enjoyed a complete immunity for a period of ten years, or up to 1884. In 1883 the scourge made its appearance in Egypt, where in three or four months it occasioned a mortality of from 30,000 to 50,000 of the inhabitants. In the autumn of 1887 it made its appearance in the port of New York, but was controlled by prompt and efficient measures of isolation at the quarantine station. It again appeared at the same port in 1892, where it received like treatment. The epidemic of cholera in Europe in 1884–5, is said to have cost France 15,000 inhabitants, Spain 180,000, Austro-Hungary 4,000, Italy 50,000, Malta 500, making a total, approximately, of 250,000 inhabitants of Europe.

We know that the specific germ of cholera, as well as that of the plague, has been isolated, and the value of the discovery of the germs of these two diseases can not be over-estimated, for it enables us to take definite precautions to prevent an introduction of these diseases and to control them if introduced. But there is much to be learned concerning the habits and conditions favorable to the propagation of the germ of cholera. We believe we can control it if we can persuade the people to be liberal in their appropriations of money, which is necessary in order to take the requisite precautions. Then again, it is of the greatest importance to be enabled to control the people should an outbreak occur.

In concluding this portion of my subject, I wish to refer to the very large increase of diarrheal diseases that has prevailed during the past year, and especially in our own State. The idea has been suggested that the great prevalence of diarrheal diseases is indicative of approaching cholera. Is it possible that such conditions, with others, may favor or invite this disease, and may such conditions not be a part of the general causation, while the germ completes the cause?

III.—YELLOW FEVER.

Haenisch says "the Antilles were probably the cradle of yellow fever." According to Hirsch, the range of the distribution of this disease over the earth's surface takes one of the lowest places among acute infectious diseases. He says further: "If we disregard its isolated appearances at different points on the western shores of Europe and its quite recent establishment as a prevalent form of sickness on the Atlantic and Pacific coasts of South America, there remain only two among the great regions of the globe to form the seat of yellow fever; on the one hand, the shores of the Gulf of Mexico, including the West Indies and part of the Atlantic coast of the United States, and on the other hand, a part of the west coast of Africa."

The earliest history of yellow fever is enveloped in obscurity. It seems to have originated either on certain islands of the West Indies, or on vessels sailing from those points to certain points on the Atlantic and Pacific coasts. The area over which it has spread, in times past, is certainly circumscribed. That the germ, if one exists, has not been demonstrated has been clearly shown by Sternberg. There is no doubt but what it is the natural offspring of regions and places characterized by the presence of putrefying organic matter under a high temperature. The persistence of yellow fever aboard ship necessarily involves the question as to its direct cause, but whatever difference of opinion may exist as to the nature of the virus of yellow fever, there can be no question as to the conditions of its existence. Decomposition of organic matter under certain climatic conditions is an essential requisite. It was formerly believed that yellow fever could only occur during certain months of the year, from April to November. It is now, however, known that it may occur during any month of the year within the area called the "yellow fever zone."

The first trustworthy account of an epidemic of yellow fever dates from the year 1635, when it prevailed on the Island of Gaudeloupe. The adjoining islands, Dominica, Martinique and Barbadoes, were invaded a number of times in the fifty years following. Since then it has occurred on the Mexican coast and the West India islands, and on the west coast of Africa. During and since the eighteenth century, yellow fever has also frequently extended up the eastern coast of North America, the highest points reached being Halifax and Quebec. It appeared in the United States in Boston in 1693; in Philadelphia in 1699; in New York in 1702; in New Haven, Conn., in 1742; in Norfolk in 1747; and first made its appearance in New Orleans, where the greater epidemics have existed, in 1796. It has never gained a permanent foothold in the United States, having always been brought from its source in the West India islands or in that locality. It is impossible to give a detailed account of all the greater epidemics from this disease. The places in the United States in which they have occurred are numerous, including Boston, New York,

New Orleans, Philadelphia, Charleston, Mobile, Pensacola, Norfolk and Baltimore. The more important epidemics occurred as follows: In 1793 in Philadelphia with 4,040 deaths, said to have equaled 10 per cent. of the population; in 1797 in Philadelphia with 1,300 deaths; in 1798 in Philadelphia, and other places (including New York), with 5,700 deaths. In 1853 the States of Florida, Alabama, Louisiana, Mississippi, Arkansas and Texas were invaded. The deaths in New Orleans, during this epidemic, are reported to have been 7,970. In 1867 it invaded Texas and Louisiana; deaths in New Orleans 3,093; in Galveston, Texas, 1,150. In 1873 the States of Florida, Alabama, Mississippi, Louisiana and Texas suffered severely, and in 1878 the most extended epidemic in the United States occurred, according to Sternberg, invading 133 towns, chiefly in Louisiana, Tennessee, Alabama and Mississippi, where there were 74,000 persons attacked, with 15,934 deaths.

It has been frequently transported to European points from its source, but has not spread extensively at those points. The fatality has varied very much in different epidemics. It is more fatal to persons who are unacclimatized than to others. Among unacclimatized adults the fatality ranges from 20 to 60 or even 80 per cent. No race is entirely exempt, but there is no doubt that negroes are decidedly less susceptible than the white race. They are less liable both to attack and to death in the event of attack. Both the attacks and deaths are more numerous among males than females. This is, no doubt, largely owing to the greater exposure of males, and to their habits, especially over-indulgence in alcohol.

In regard to the manner of transmission or mode of dissemination there is strong ground for the belief that it is a microbic disease, although not yet demonstrated. It can not survive cold weather, and the first one or two frosts destroys its vitality. Under certain conditions, however, it can be carried in merchandise, vessels, and especially where there is a lack of cleanliness. It is believed to be easily conveyed in old vessels that are undergoing decay. Just how this disease enters the human body is not yet known. It is certainly infectious, and the poison is claimed to be as specific as atropia or hydrocyanic acid. It can be transported from place to place in the ordinary vehicles of travel and traffic, and in the bodies or baggage of men and women. It seems to take root, however, in the locality, in the soil as it were, and to be contracted from the environment of the patient rather than from the patient himself; the locality seems to remain infected after the patient has been removed, for weeks and even months. There is a very important circumstance connected with the transmission of this disease which, I believe, should receive very careful attention from all members of the medical profession. It is a condition which exists as a warning in other diseases, as has been referred to under the head of cholera. It was first mentioned, so far as I know, in the Surgeon-General's report of the Navy Department for 1873-74, by Dr. Joseph Wilson, Medical Director of the United States Navy, under the head of "An Interesting Epidemic." He says: "There is a variety of yellow fever poisoning which seems not to be generally understood; at any rate, not generally insisted on. I allude to the numerous cases of light febrile disease which precede the development of the fully formed fatal cases of yellow fever, usually noticed in the first cases of an epidemic. Every writer on epidemic cholera tells us of the numerous cases of diarrhea preceding the epidemic, but no one describes these numerous cases of slight febrile disease, which are the harbingers of the yellow fever epidemic." He then goes on to show that for some time before an outbreak of yellow fever they had a large number of these febrile conditions—some diagnosed as mild typhoid, some as simple fever, etc., followed by an epidemic of yellow fever. An interesting feature connected with epidemics of this disease, as well as others, is the commercial relation, and the difficulty that sanitarians have in impressing upon the people the importance, not only from the standpoint of life saving, but from a commercial standpoint, of controlling these outbreaks. This has been well illustrated by Dr. Samuel Choppin, of Louisiana, in describing the epidemic of yellow fever that occurred in this country in 1878. It appears that an estimate of the total loss to our country from this epidemic was made by Mr. A. B. Farquhar in a letter to Surgeon-General Woodworth, in which he places the cost at $175,000,000. In New Orleans alone there were estimated 25,000 cases with 4,500 deaths, and the cost to that city, based upon a moderate estimate, was $12,072,500. It is also shown that the city of New Orleans, by its commercial interests with the tropical ports, from which this disease was brought, amount to about $1,500,000 per year, while the loss in one one year by the presence of yellow fever is estimated at over $12,000,000. Dr. Choppin, referring to the quarantine system, which is impossible to make perfect on account of the commercial interests, very wisely says: "No conditional quarantine can ever be made effective, because first, of the laxity with which laws are unfortunately executed in this country, and secondly, because of the cupidity of the commercial men having large interests at stake, who will always move heaven and earth to evade successfully all quarantine laws and regulations." Until people can be educated up to the point of recognizing the importance of these sanitary measures, we can never expect to be able to control epidemics and they will occur from time to time, for it seems to be a law of nature that people must learn by experience alone.

IV.—SMALLPOX.

It hardly seems necessary for me to refer to this subject, because I take it for granted that all present have learned the lesson of experience that I have just quoted. This is another disease, the essence of which is unknown to us, as you all know. We do have, fortunately, a means of prevention, which is not provided for positively in the diseases that I have just mentioned, that of vaccination. It would be impossible, in a few words, to even scan the history of smallpox. The earliest records of its existence are to be found in Hindoostan and China very many years before the Christian era. It has invaded all parts of the world from the earliest history, and at times the havoc caused by its ravages has been something appalling. One of the earliest writers was the Arabian, Ahron, who practiced in Alexandria in the time of Emperor Heraclius, 610 A. D., but for what is known of these writings, and others, we are probably indebted to Rhazes, physician to the hospital at Bagdad, who died about 923 or 930 A. D. He was the first to distinguish smallpox from measles. Epidemics from this disease are too numerous to mention. The more severe, perhaps, occurred in Iceland, the records of which are to be found in those of the Danish gov-

ernment; the worst epidemic of all occurred in 1707; among a population of somewhat over 50,000 it carried off 18,000. In Ireland where the lamp of learning burned all through the Dark Ages, we find that this disease raged to a great extent, and a very interesting chapter might be written concerning this if time allowed. Emerging from the Dark Ages, Vidus Vidius, 1550, incidentally refers to it as attacking all persons in the course of their lives, and Mercurialis, born in 1530, holds that almost every person must have it once. Many others at this time used similar language, and it seemed to be the general impression that every person born into the world was liable to, and most probably would at some time, have smallpox. Sir Gilbert Blane is credited with the statement that "it had destroyed a hundred for every one that had perished by the plague." George Bell, of Edinburgh, in 1802, wrote that smallpox was one of the most severe and dangerous diseases to which mankind is subject.

The full power of the disease, however, can only be seen as we learn its ravages in the New World, among unprotected populations. This began in 1507 in the West Indies, where it was so disastrous that whole tribes were exterminated; in Mexico, it is related, it even surpassed the cruelties of conquests, suddenly smiting down 3,500,000 of the population and leaving none to bury them. In Brazil, in 1563, it extirpated whole races of men. At about the same period, in a single province in Quito, it is related, it destroyed upward of 100,000 Indians. In Russia, according to the calculation of Dr. Alexander Creighton, physician to the Emperor in 1812, every seventh child died annually of the smallpox; and Colon set down the deaths in France as from 60,000 to 72,000 annually. This was before vaccination. The periodicity which existed in the pre-Jennerian times is interesting as showing that an epidemic of the disease caused an immunity among those attacked who were fortunate enough to live, for a certain period of time, and there is a relationship between this thought and vaccination as practiced at the present day. This periodicity differed in different localities. The immunity seemed to be exhausted sooner in some places than in others, and may this not be true in regard to vaccination? Smallpox first made its appearance in the United States in Boston in 1649, and from then to 1792, about one year in twelve, it was epidemic, while in Vienna from 1742 to 1759 it was epidemic about every fourth year. The enormous mortality from the different epidemics in this country are too familiar to you all for me to quote, and the mode of transmission is also well known. The great prophylactic power of vaccination in smallpox has been so thoroughly demonstrated in our present outbreak, that it does not seem possible that the opponents of vaccination have a single thread to hang on. For a time being, after the disease exists, with the large amount of vaccination that has been done, smallpox will decline until the immunity is lost by time and the future generation comes up unprotected, then we will have a repetition of the disease. To prevent a prevalence of smallpox is a work difficult to perform, for as I stated before, the great masses of the people will only learn by experience. We are, however, very much better off than our forefathers in respect to knowledge pertaining to the greater epidemics. We now know some of the potent factors which cause certain diseases, that are, or may be classed as epidemic. While the people are slow to realize the invaluable scientific discoveries that have been made concerning epidemic diseases within the past two or three decades, the more intelligent portion is beginning to understand more and more their value, and the medical profession may well feel encouraged with the progress made.

204 Biddle Street.

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THOUGHTS ON TYPHOID FEVER, ITS ETIOLOGY, PATHOLOGY, ABORTION AND TREATMENT.

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Prior to the dark ages we find little to indicate that typhoid fever was diagnosed as a distinct form of disease. When the mind of man awoke from the sleep of centuries a new impulse was given to all departments of science, and through the investigations of Spigelius, Sydenham, Huxham, Trousseau, Stöll, Petit, Peyer, Andral, Louis, Chomel, Bretonou and a host of others, we have our knowledge of typhoid or enteric fever, as a specific zymotic disease. Until within a very recent period the concensus of opinion has been that it could not be aborted, but must run a course, and whether only communicated from pre-existing cases or occurring spontaneously, are still mooted questions. Virchow says, wherever we find a cell there must have been a cell—it is a concise statement of an almost universal belief, applicable to all forms of life since the monad, the microscopic atom of protoplasm that Infinite Wisdom unnumbered ages ago placed on earth, endowed with evolutionary force, developed on and on and up through creeping things and bird and beast, to man. Without the intervention of the ages the varied cells of our bodies have been proliferated and differentiated from a microscopic mass of protoplasm, an embryonic cell, into the cells that constitute our bodies, each cell having a life of its own, and subject to the universal law, "each after its kind."

Whether the author of the earliest record of creation, made by man, sought to convey the impression that the Creator "formed man of the dust of the ground," with all his organs and their myriad cells in place, and "breathed into his nostrils the breath of life," or that when there had been evolved from the progressive monad a sufficient number of cells in the gray matter of the brain through which to correlate impressions borne to them through the senses, he

breathed into him a spiritual life and he became a living soul; in him we find differentiation completed No new form of life, within or about us, has since appeared on earth; all the seemingly new forms, whether occurring as monstrosities or diseased cells, are only pathologic diversions. Stitch in discussing the etiology of typhoid fever advanced the belief that every one carried in the intestines material susceptible of putrid intoxication, requiring only favoring conditions for the production of sepsis and typhoid fever. Peter came to a similar conclusion, believing this material was not simply foreign matter within the alimentary canal, but waste products of the organism, capable under lowered vital action of auto-intoxication. Both believed in the spontaneity of the disease, but that it originated in septic matter in the intestine. Later authorities have demonstrated the bacillus typhosus or the typho-abdominalis bacillus, the Eberth-Graffy bacillus, and Koch, Eberth, Graffy, Chautamese, and a host of investigators following in their pathway, believe typhoid fever, and perhaps all disease, the result of microscopic entities foreign to the organism, and hence its occurrence *de novo* impossible.

However life's varied forms may have been differentiated, we know that from the granule of protoplasm within the embryonic cell have been differentiated cells that differ as widely in function and form and chemic constitution as the micrococci, or even the higher forms of life, and that the toxins of their ptomaines are as varied and as virulent is a foregone conclusion. When retained within the organism may we not rationally conclude they are as capable of producing varied forms of disease as the ptomaines and toxins of the so-called pathogenic germs? Those who defend the germ theory of disease beg the whole question when they assume a lowered vitality, with the retained ptomaines of tissue cells, as a necessary precedent to germicidal activity. When natural zymosis is normal pathogenic germs are not present, or if present harmless. It is only when the devitalized cell ptomaines are permitted to accumulate within the tissues that they appear in vast numbers, and their character is determined by the chemic elements of the cell ptomaines on which they feed. While the bacteriologist tells us the ptomaines of bacilli, bacteria and micrococci contain the toxins that produce disease, what of the leucomaine and the toxin of the dead tissue cells that have failed of return to harmless elements, through defective vital action? We may breathe the purest air, drink the purest water, eat the most wholesome food, with every environment perfect, but the changes incident to all vital action involve the death of cells, and in every dead cell lies a hidden poison. If not returned to harmless elements and eliminated from the body they are ptomaines, leucomaines and may become toxins, the poisons varying in character with the chemic constituents of the cells from which they spring. If, however, as in health, metabolic and katabolic changes are normal, through natural zymosis they are returned to oxidizable, harmless forms and borne from the body through its emunctories, without the generation of disease. As disturbed vital action is capable of producing all the toxins attributed to pathogenic germs, never present in force without such disturbed action, and as germicides can never be given of sufficient strength to destroy these germs without first destroying the body in which they reside, while antiseptics and disinfectants may prevent or arrest the processes that make cell ptomaines toxins, why go "around Robin Hood's barn" for causation? If caused by toxins from the etoma of dead tissue cells retained in the body, which we may rationally expect will produce like disease wherever implanted, we have a rational theory of disease and can readily understand how it may be both spontaneous and contagious, why antiseptics and disinfectants of less than germicidal force may prevent or arrest its action, and why it does not harm those in robust health, and if there is any virtue in serotherapy and antitoxins herein lies the key. The toxins of the ptomaines, not of vegetable germs, but of dead cells of special types, undergoing a specific form of sepsis, can probably be modified by treatment so that they will produce a modified form of the specific disease they represent, and protect against future attacks as vaccina protects against variola. However the poison of typhoid fever is generated, its wide diffusion, its preference for the older and more advanced civilizations, and for early manhood, when the dangers of infancy have passed and active life with its duties and pleasures is at hand its grave character and often fatal issue makes its consideration and the possibility of its abortion, or arrest, of great importance to the profession and to humanity. It is universally recognized as a filth disease, usually water-borne, caused by a specific poison communicated through the alimentary canal by contaminating excrementitious matter from that canal. Authorities differ as to the precise nature of the poison, but all agree that it may be rendered inert outside the body, and if without why not within? If a pathogenic germ whose vitality can not be destroyed within, without destroying the vitality of the body in which it is found, we can readily understand why not. The fact that it can be destroyed would indicate that the germ is not its cause.

Water is the medium through which the poison is usually conveyed to the alimentary canal. If caused by germs they must have been borne to the privy pit, or other source of contamination, from preëxisting cases. While the disease may often be traced to other cases every physician of large experience has had cases that, search where he would, defied all effort to trace their pedigree. They had no line of descent. By way of illustration take an extract from the memorandum of an endemic, confined to a single home, to which I shall refer again. Oct. 3, 1857, was called to see N. M., aged 10 years. She is one of a large, intelligent, cleanly and well-to-do family, living near the top of the northern slope of the divide of the two Miami Rivers, three miles south of Franklin, Ohio. She had not been from home, and no strangers had visited the house. No case of typhoid fever existed within a circuit of many miles, and no case had ever before occurred on the farm. A few days later two other members of the family were stricken with the disease. All the cases were typical typhoid fever and ran long and doubtful courses. An investigation showed that the water used by the family bubbled up clear and sparkling, in an open, well-walled cellar, and after perambulating a milk-house danced away, in a bright stream, down the hillside. The privy vault was found an hundred yards from the house, but higher up the hill. It had been there for a generation, the farm having been opened in the early settlement of the country, and the whole family were born in the house. As no other possible source of the disease could be discovered the presumption was that some of the accumulating contents of the vault had under-

gone a specific change, and found their way to the underground stream that fed the spring. In a well-developed case of typhoid fever diagnosis is not difficult. The tenderness in the right iliac fossa, consequent upon inflammation and ulceration of the solitary and agminated glands of the ileum, with a gurgling sound upon pressure, the rose-colored eruption, the fever without any distinct remission, the morning and evening temperature varying only a degree or two, the listless expression and tendency to stupor, the hemorrhages, especially epistaxis, and as the disease progresses the dusky complexion, the dry tongue with its brown coat, the accumulating sordes, the tympanitic bowels, with the constant tendency to complications, are sufficiently characteristic. It is in the earlier stages that diagnosis is difficult in a disease whose onset is so varied, and yet an early diagnosis is of the greatest importance. Though the invasion is usually so gradual that the patient does not know for a time whether he is sick or well, and in "walking" cases keeps about until suddenly taken down with perforation, it is not always thus. Sometimes the attack comes on suddenly with a chill, at others, as an acute catarrh. In other cases during the inchoative stage there is a diarrheal action, much like that produced by physic. A special susceptibility to the action of cathartics is always present. There is generally languor, listlessness, headache, and a tendency to epistaxis, likewise a general hebetude and an inclination to sleep is apparent; not infrequently there is insomnia and restlessness. An early and accurate diagnosis is important, for if we do not see or recognize the disease until there is ulceration of Peyer's patches we can not abort an ulcer, though we may yet modify or shorten the course of the disease. Whenever typhoid fever is endemic, especially when it is going through a family, as it aften does, any suspicious cases should be subjected to preventive treatment. It may be laid down as a rule in any markedly contagious disease, as variola, if we err, it should be in the interest of society. So in the early stage of typhoid fever, if err we must, it should be in the interest of the patient. Wherever a case of typhoid fever is found every precaution should be used to prevent a second case. Whatever the specific poison it is generally communicated from and through the alimentary canal, water being the usual medium of communication. In all centers of population the privy pits that honey-comb the soil contaminate the city wells, whose water is the prolific source of the disease. If such water must be used for potable purposes it should always be boiled. All discharges from typhoid fever patients should be received in a vessel containing a saturated solution of crude sulphate of iron, the privy contents being saturated with the same. In every suspicious case occurring in the family where a case exists, or in the immediate neighborhood, the decks should be cleared for action and the patient put under treatment. Professor Chambers, of St. Mary's Hospital, London, a most reliable observer and attractive writer, in his lectures delivered 1861–2 says: "At an early stage, even after the virus has begun to act upon the system, the fever may be stayed by emptying the stomach. . . . Those who have watched my practice will have seen the fever cut short and convalescence entered upon immediately." Referring again to my notes of the cases in the family of M., October, 1857, I find, in addition to the three well-developed cases, three other members of the family had the prodromic symptoms of the disease. To each was given a mild catharto-emetic, until free emesis. This was followed by tinct. ferri chlor. in drachm doses every six hours, rest and a mild diet. In a few days all symptoms of the disease had disappeared. We can not prove a negative, or that what does not happen would have happened. But when in a swamp region we have the premonitory symptoms of periodic fever who doubts that the disease may be aborted with full doses of sulph. quinin, or other antiperiodic, or the premonitory symptoms prevented by donning dry flannel underclothing when the chill of night comes on, and sleeping between woolen blankets? Since the above date the same experience has been so often repeated that its abortive action can not be questioned.

Dr. Woodbridge, of Youngstown, Ohio, says in the JOURNAL, April 14, 1894, that with a "eucalyptol-guiacol mixture" he can "abort every case and save every life." While we know that many cases of typhoid fever may be aborted, we do not claim that every case can be aborted and every life saved. If not called until there is lesion in the glands of the ileum, and where there is not only tissue death in these glands, but the whole system is saturated with a poison that lowers vitality and vital resistance, we have the fully developed disease, and there can be no abortion. It must have its course. Into the parched mouth there comes no secretion from the salivary glands to digest amylaceous foods, which if digested could not enter the capillaries through the dry and thickened mucus overlying them, and the tongue and fauces typify the stomach, where no pepsin will be found to digest nitrogenous foods, while along the whole alimentary tract there is an atonic irritability that resents all ordinary attempts to provide material for repair. The glands of the outer coating of the body are as dead or dormant as those along the alimentary canal, the sebaceous cease to yield the unguents that keep the skin soft and pliable, and the sudorific, whose excretion helps to regulate both the temperature and the circulation, ceasing to act, the surface is excessively dry and hot. The hemoglobin, escaping from the poisoned cells, is found in the urine and feces, while decompositions have rendered the blood suddenly alkalin, and in all the structures of the body katabolism is in excess of metabolism; the whole organism is being destroyed by an unintermitting fire, not the heat produced by physiologic activity, but pathologic heat, caused by dead tissues returning through chemic decomposition to original elements, heat like that occasionally observed after death. All the great emunctories are sleeping at their posts, because the poisoned brain can not generate the force necessary to their functional activity, though their action is sadly needed for the removal of waste products. Let us supplement the arrested action of the sebaceous glands with frequent inunctions of cocoa butter, medicated, if you wish, with antiseptics; moisten the dry, harsh skin by frequent sponging with water or water and acetic acid, of such temperature as is most agreeable to the patient, and thus stimulate activity in the sebaceous and sudorific glands, and invite the circulation to the capillaries of the periphery. Do not seek to overcome the excessive heat by depressing the nerve centers with such sedatives as the coal-tar products. Vitality is already nearly *nil*. The heat is not disease, but only a danger signal, though beyond a certain undetermined degree it may destroy life. Here it is a necessary sign of excessive destruction

and decomposition. While you administer comfort and avoid danger by keeping it within due bounds, do not attempt to control it with depressants. Having given due attention to the surface of the body look a little farther. The functions of the digestive tract are arrested. There is loss of appetite, and if food is taken, it produces nausea or vomiting, flatulence and diarrhea, and yet the excessive disintegration of the tissues demands food for repair. Not only are the tissues in which are the stored force of the organism being rapidly destroyed, but as well the nitrogenous tissues, and material for their replacement must be supplied. Solid foods can not be digested, and if not ejected cause a putrefactive diarrhea and aggravate the glandular lesions. The beef extracts on the druggists' shelves are usually frauds. Eggs, however prepared, are liable to decompose and generate sulphuretted hydrogen and other injurious gases. There is no salivary secretion to digest amylaceous foods. Milk, almost always accessible and supplied by nature to the feeblest digestive organs of all mammals, contains not only all the elements of nutrition, but given hot, to stimulate the alimentary tract, and by sips, to prevent the formation of solid curds, is not only generally acceptable to the patient but the little waste it produces leaves the small intestines practically at rest, exercising upon them a soothing influence. So marked are its benefits that good authorities have advocated a "milk treatment." As a diet in typhoid fever milk, properly administered, is the *sine qua non*. I remember very well one typhoid patient, a previously plump and healthy girl of 16 summers, who lived for four weeks on milk, and to all questions of diet gave the unvarying reply, "Milk is good enough for me," and convalesced with scarcely the loss of a pound in weight. Milk should be given as above, in such quantities as can be digested and appropriated, every two hours, giving, if possible, at least three quarts in twenty-four hours. To supplement the oft-times absent lactic acid of the stomach, it should be preceded by a few drops of the ever reliable antiseptic, dilute hydrocyanic acid, which may be diluted, sweetened and flavored to suit the taste. If you would shorten typhoid fever and secure perfect convalescence, the first great necessity is a diet that will secure repair, and the second is like unto it, the prevention of all effort, mental or physical, that tends to exhaustion. After these essential directions we look a little farther and we find the typhoid poison is being carried to all the tissues of the body. There is a lowered vitality, lessened power of resistance and greatly increased interstitial destruction. The red corpuscles are diminished in number, many of them being "melanosed," shriveled, serrated and marked with black spots, while their hemoglobin is being discharged into the serum, coloring it and giving to the skin its dusky hue. The various cells of the body nourished by this poisoned blood suffer, the effect being especially marked in the nervous system, at first by a general aching, sometimes by neuralgic explosions, by chilliness and an increasing and deepening torpor, a general interruption of the generation and dissemination of vital force, especially marked in the cells of the cortex by failure to note and correlate impressions, and by a low muttering delirium.

As far as the absorbents and exosmosis are capable of action they carry the excessive waste to the already gravely poisoned circulation. The dead cells not fully returned to original elements are cellular ptomaines and through decomposition cause a superalkalinity of the vital current. The torpid condition of the great eliminators, kidneys, liver and skin, permit this alkalinity to continue and increase. Yet this grave condition is not beyond our reach, and we must not stand idly by until nature removes it or life succumbs. By the free use of hydrochloric acid and hydrochlorate of iron we can supply the deficiency of salts, neutralize the alkalin blood, arrest nutritive decomposition and render the excretions aseptic. It may be given as a grateful lemonade or mineral water, and given *ad libitum*. When it can not be absorbed we have ever at hand the modern invention, the hypodermic syringe, with which we may both nourish and medicate. The use of mineral acids in "putrid" fevers is older than the days of Boerhave, Van Sweiten and Sydenham, and they can not be driven from the field by the high-sounding products of modern pharmacists. Have alcohols any power to shorten the fever, or to help us to a safe haven? Good men answer the question differently. We think they have, but not as ordinarily given, for stimulation or nutrition, or because we are at our "wits' end," and do not know what else to prescribe. In all cases of typhoid fever destructive is in excess of constructive metamorphosis; alcohol may hold destructive metamorphosis while we build up with nutrients. When there is great nervous depresssion, and exhaustion is increased by its felt sense, when the tongue is tremulous and the hands shake with the slightest movement, when the pulse is sharp, weak and unequal, when there is low, muttering delirium, you may with an alcoholic anesthetic give relief. The best form is sour catawba, if the stomach is irritable, sparkling catawba. The salts in the wine stimulate the kidneys while it gently soothes the nervous system. The stronger alcohols increase the injury, already sufficiently grave, of the typhoid poison. The catawba, if pure, may be taken *ad libitum*. Galen's free commendation of alcohols in every form and in every case, has done much harm. Be sure you understand the therapeutic action of alcohols and prescribe them with intelligent purpose. Everyone who has tried it will agree with Dr. Geo. B. Wood, who says in his "Practice of Medicine," vol. I, p. 329, "I will repeat that the oil of turpentine may be used, with good hope of benefit, in any case of enteric fever in the advanced stage with a dry tongue." It should be made into a pleasant emulsion. Where there is local stasis, hastening, as it is prone to do, to a low grade of inflammation, molecular action should be aroused by hot fomentations and cups, wet or dry, as the case indicates. In all stages of the disease the patient should drink freely of muriatic acid lemonade, or a mineral water made of muriated tincture of iron, and the whole family where the disease exists should make free use of the same drink. Quite recently I have had, by accident, two instructive cases, the patients not understanding or heeding directions. October 1, called to see Dominic Roletta. Found he had had continuous fever for a week. Tongue dry, dark and heavily coated, tenderness and gurgling in the ileo-cecal region, diarrhea, pulse 95 and temperature 101 F. Among other things prescribed tinct. ferri chloridi ʒiij, thirty drops every six hours. October 2 the patient had taken during the night all the tincture of iron. The tongue was moist and clean and the patient free from fever, which did not return. November 9, saw Mrs. Zangalina, aged 20, a primipara of two weeks. Found her in a filthy bed in a small, mud-covered Italian hovel,

with every surrounding unsanitary, temperature 105 degrees, pulse 150, skin mottled, abdomen tender, etc. Among other prescriptions was two ounces of dilute muriatic acid and chlorinated tincture of iron, equal parts, with directions to add enough to a glass of water to make a pleasant drink. It was all taken before my visit next morning, and *post hoc* or *propter hoc*, there was an arrest of all grave symptoms and a speedy return to health. If administered in sufficiently full doses we have in hydrochloric acid and the chlorinated tincture of iron abortifacients and curatives as positive in their action upon several of the zymotic diseases than the sulphate of quinia in remittents.

TYPHOID FEVER TREATED BY THE WOODBRIDGE METHOD.

Report of Eighteen Cases of Typhoid Fever treated by the Woodbridge Method at the Worcester, Mass., City Hospital without a death.

BY WESLEY DAVIS, M.D.

WORCESTER, MASS.

During my service from Oct. 1, 1895 to Jan. 1, 1896, there were admitted eighteen cases of typhoid fever all of which were treated by the Woodbridge method, only that the tablets were given in double doses, two every half hour in place of one every fifteen minutes. Of these cases four had intestinal hemorrhage, none commencing later than the fourth day of treatment; we had very little tympanites; no sordes, tongue rarely found dry and then only for a short time, practically no delirium. Three cases had relapse, one a slight recrudescence of four or five days, the other two had an elevation of 2 or 3 degrees and it was ten to fourteen days before the temperature reached normal again; no cause could be discovered. Two or three were nauseated by the treatment and it was suspended for a few hours and subnitrate of bismuth given, when the treatment was resumed and persisted in, not even hemorrhage being considered a contra-indication.

Several had stomatitis to such an extent that the tablets were suspended and guiacol carb. given in from 3 to 5 gr. doses alternately with the capsules, and the bowels were kept open with 1-20 gr. of podophyllin given with each dose of medicine *i.e.*, every hour and a half or small doses of magnesia sulph., or both as seemed necessary.

One case came in with a septic hand which ultimately required amputation, but fortunately for the diagnosis he had an intestinal hemorrhage of half a pint the second day after admission. Another after several hemorrhages had a chill and temperature of 106 degrees on two consecutive days, after which no local complication being discoverable it yielded to quinin; another had a sharp attack of local peritonitis, probably nature's method of preventing perforation. There was one case of parotitis, also one of double pleurisy with slight effusion developing after ten days when the temperature was nearly normal. We had the reputation of having *mild* typhoid fever at the City Hospital during the fall. When we consider that it is mainly a charitable institution and that the city as a whole presented the usual death rate from the fever, I am compelled to think that the treatment was in a measure, at least, responsible for the mild form assumed and *no deaths*. With the same number of cases during the corresponding period of 1894 we had four deaths under the regular treatment. No typhoid case was refused admission if we could make room for it, as we were anxious to give the treatment a thorough trial. In strict justice I wish to say that one case in a state of delirium such that it could not be longer cared for at home, was sent to the hospital after my visit one day and died before my arrival the next day, being in the hospital fifteen hours. I have not included this case but refer to it that there may not seem to be a discrepancy when the hospital report shows one death from typhoid fever during the period. The house officer says this was the only case this season where he has seen the characteristic sordes upon the teeth. The regular treatment by sponge baths, usually cold, when the temperature rose to 102.5 or 103 degrees was faithfully pursued and turpentine stupes, opiates, quinin, strychnia and stimulants when indicated were not omitted. The diet in all cases was liquid at first. Milk, lime water and milk, beef tea, beef juice and broths of various kinds in regular quantities and at stated intervals. Stale bread or toast made from it was given, whenever desired by the patient regardless of temperature, if the tongue was moist and tolerably clean; if this was eaten with a relish and did no harm it was allowed more freely and soon followed by custards, dropped egg, egg on toast, etc. *if desired*, and in a few days tender boiled chicken, baked potatoes and the like. During the treatment the stools smell quite strongly of the medicine, which would appear to show that they can get to the site of disease in the small intestines. This antiseptic treatment seems to prevent decomposition and the formation of gas whatever diet may be given and the convalescence is more rapid in consequence of the extra amount of nourishment tolerated and assimilated.

I learn from the board of health, where all cases of fever are required to be reported, that during the three months there were 69 cases reported, from which, if we deduct the 18 at the hospital, we have 51 cases cared for by the various methods and means that a city of a hundred thousand inhabitants affords, with a mortality of 12, a death rate of 23½ per cent. outside the hospital.

I wish to add that I have treated by this method seven cases in private practice without a death, and some have seemed to show that it can be aborted.

FIBROID TUMORS OF THE UTERUS. MEDICAL TREATMENT—GENERAL CONSIDERATIONS.

BY FRANKLIN H. MARTIN, M.D.

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In the consideration of the histology, growth, anatomy, varieties and symptomatology of fibroids of the uterus one is irresistibly drawn to the conclusion that each one of these growths is a law unto itself. Such is certainly the case when we come to the consideration of treatment.

A fibroid tumor is a benign growth. The principal symptoms arising from it are due to the effect of its presence upon organs associated with it or in close proximity to it rather than from any inherent qualities. From its slowness, in the majority of instances, to produce serious symptoms, and the rarity of a fatal termination as a direct result of it, patients are with difficulty aroused, early in the history of the disease, to adopt radical measures for relief. Hence innumerable symptomatic remedies have arisen, each for a brief time having enjoyed the reputation of specifics, only to sink into their true positions as soon as the light of

experience had shown upon them. The simple enumeration of a list of these remedies would fill a long chapter.

The remedies for fibroid of the uterus which merit attention must be considered under three principal heads:

1. Medical treatment.
2. Electrical treatment.
3. Surgical treatment.

To indicate when each of the above methods of treatment could be employed with the greatest advantage to the exclusion of the other, how or when two or more could be combined to greatest advantage would be a task which would necessitate the careful analysis of a large number of fibroid cases, together with all the peculiarities of the growths with their surroundings, the temperament and the physical condition of each particular patient possessing the tumor. The most that can be attempted is to describe the various remedies; the exact physiologic or mechanical effects of each; the manner of administering drugs; the chemic, mechanical and physical effects of electricity, with a comprehensive description of the details of application; the many operative procedures including the rationale of each with a minute technical description of those which merit attention; and finally to show wherever each remedy is especially adapted to counteract some specific condition or symptom of a fibroid uterus.

I will therefore consider each grand division of treatment in detail trusting to the diagnostician to apply the remedies as the indications in each particular case may dictate.

MEDICAL TREATMENT.

The medical treatment of fibroids of the uterus has played an important part in the symptomatic relief and the prolongation of life of those afflicted with this dread condition. For convenience its therapeutics may be divided into general tonics, alteratives, sedatives, astringents and special uterine tonics.

General Tonics.—Rapid growth of a fibroid tumor and a condition of general good health in a patient seldom exist together. So true is this, that I have learned to assure patients laboring under this disease that their tumors will not increase in size rapidly if they can by some means keep themselves in a condition of natural tonicity. While undoubtedly the cause, frequently, of the general lack of tone is the rapidly growing tumor, I believe its growth may be retarded by adopting means to counteract its effect upon the patient. While the tumor with its accompanying pain and loss of blood, and rapid growth must impair general health, that impaired tone of necessity leaves the patient with still less resistance to withstand the onward march of the disease. In other words the results of the rapid growth of the tumor does in turn become one of its aids to still more rapid destruction. Therefore fibroid-tumor patients should be abundantly nourished. The loss of blood should be met by an abundant supply of wholesome substantial food. Bitter tonics such as quassia, calumbo, nux vomica and cinchona should be administered to increase the appetite. Iron should be administered in a form to be readily assimilated in order to improve the blood. The patient should be urged to drink milk and cream between the regular meals. Prepared foods both of the nitrogenous and farinaceous order should be employed to reinforce the ordinary diet. Predigested foods may be found of service if the digestive organs fail to stand the strain of over feeding.

As nerve tonics the compound syrup of the hypophosites with small doses of quinin, strichnia and iron are often of great service. Strychnia in gradually increased doses until the patient takes 1-10 of a grain four times a day, I consider of great value as a tonic in these cases. The dose should begin at 1-40 or 1-60 and be increased gradually, being careful to avoid unpleasant constitutional symptoms. This tones the bowels, acts as a vaso-constrictor tonic everywhere, and I believe acts as a direct tonic to the muscular structure of the uterus itself, while it undoubtedly acts as a vaso-constrictor to the uterus and tumor. As a direct bowel stimulant and laxative aloin with strychnia and hyoscyamus has few equals. Cascara sagrada may take the place of the above as an alternative laxative. General stimulating baths often prove beneficial tonics to fibroid patients. Sea salt baths, warm or cold with judicious rubbing to establish reaction, are often recommended. Chlorid of sodium baths may be employed in lieu of the sea salt baths.

Hot water as a local tonic, employed as a vaginal douche, frequently relieves excessive congestion of the uterus. To accomplish this object the water must exceed a temperature of 115 F., the patient should use at least two gallons at a time and should employ it while in the recumbent position on the back. Chlorid of sodium as an antiseptic and tonic may be dissolved in the water—3 to the pint. Or to get the advantage of an astringent the same amount of powdered alum will prove of advantage. The water must be hot. Tepid water will favor hemorrhage.

Change of air from the sea shore to the mountains (not too high an altitude) or from the mountains to the sea shore often improves health and retards the growth of these mysterious tumors. An ocean or a European trip will often bring a remarkable change for the better in these unfortunate cases. Even a slight move which only involves a change of routine, or surrounding the patient with a pleasant change of companions will draw them away from themselves and occasionally give them just the impulse which they require to regain the lost tone.

Alteratives.—Arsenic, muriate of ammonia, mercury and iodin have an important role in the therapeutics of uterine fibroids.

Arsenic in the form of the acid or in Fowler's solution given in 1-20 dose of the former and in 5 drop doses of the latter immediately following each meal will often act as a powerful alterative tonic in these cases. While no specific action on the growth of the tumor has been demonstrated, its general effects are frequently so satisfactory in maintaining a general condition of tone that it is strange it has not run the gauntlet of a specific.

Muriate of ammonia, which has none of the tonic properties of arsenic and while inferior in alterative properties, has enjoyed a brief trial as a specific for fibroids. Its principle action, it seems to me, lies in the direction of a hepatic stimulant. By favoring a free portal circulation its action in relieving uterine and pelvic congestion must be obvious. I frequently employ it in 5 to 10 grain doses to be taken in one-half glass of water on rising in the morning. It acts in this way as a very gentle stimulant to the bowels and may be used as a substitute for saline mineral water. As a specific for fibroids, however, one must not place upon it much reliance.

Mercury in the form of blue mass or calomel, is the most valuable alterative, laxative and tonic we have in all pelvic difficulties. Its efficiency and superiority as a laxative lies in the fact that it is our best hepatic stimulant. It unloads the portal circulation, relieves pelvic congestions and favors the rapid removal of waste products from the pelvic organs. It too, possibly from the same reason, increases the patient's desire for food, aids healthy digestion, favors normal assimilation and gives an impetus to the general circulation. My valuable friend and teacher, the late Prof. W. H. Byford, taught me the value of this remedy as a tonic, when properly administered, in gynecologic practice. As a laxative the blue mass should be given in 1 to 2 grain doses every evening for several days, then to be omitted for a like number of days. Following the night dose the next morning should be administered a mild saline laxative, either a seidlitz powder, or from a drachm to two drachms of granulated citrate of magnesia in one-half glass of water. As an alterative tonic it may be given in half the above doses extending over a period of twelve days. Calomel is a convenient form for administering mercury as a tonic and alterative. Triturated with sugar of milk, doses of 1-30 of a grain twice or three times a day may be given for a period of twelve days. An interval of twelve days should then elapse before recontinuing the drug. The bowels should be kept free with saline laxative while the mercurials are in use, and care should be exercised to avoid the unpleasant consequences of administering hydrochloric acid coincident with the drug.

Iodin in the form of tincture applied to the cervix of a fibroid uterus or employed as an application to the mucous membrane has been much employed as a routine treatment for fibroids. As an alterative its effects on a fibroid tumor must be slight, but as a stimulant and antiseptic application to the endometrium of an endometritic uterus it certainly will do good. The injection of iodin into the uterine tumors will scarcely be tolereted as a rational or at least as a desirable treatment at the present day.

Sedatives.—The bromids, the coal tar antipyretics, chloral, cannabis indica, hyoscyamus and opium are sedatives which succeed in relieving the suffering of many fibroid patients and which, when judiciously employed succeed occasionally in tiding them over desperate attacks which would prove fatal without their assistance. In chronic conditions like this one we are considering, no physician should mistake the temporary effects of these sedatives for effects of a curative agent. Symptomatic relief only can we hope from them while we are selecting and marshaling our final conquering remedies.

The bromids are probably as safe and as enduring as any mild sedative, where irritability and general nervousness characterize the patient's suffering instead of actual localized pain. Bromid of potassium, ammonia and sodium mixed in solution given in doses containing 10 grains of each, the doses given at intervals of four to six hours, until nervousness is allayed and sleep obtained, is a favorite method of mine of administering this drug. Frequently the above combination given us a dose at bedtime will accomplish good.

Antifebrin, phenacetin and antipyrin I have found of value in relieving severe menstrual pain accompanying fibroids. By giving them in their appropriate doses at intervals of two to four hours during the painful period of the menstruation frequently complete relief is obtained.

Chloral is a favorite hospital remedy of mine. I employ it for the uterine pain which accompanies menstruation exclusively—not as a steady remedy. The favorite method of administering it is to instruct the nurse to give 20 to 30 grains in three ounces of water as a small rectal enema not oftener than once in four hours for severe pain or sleeplessness. It does not affect the stomach when given in this manner, and the method of administering the remedy serves to make it unpopular to the patient. In fact, an effort is made to keep the patient in ignorance of the contents of the enema.

Cannabis indica as a remedy for pain in menstrual difficulties is one which I have never learned to appreciate. The remedy is so uncertain and variable in its actions that I usually resort to something upon which I have greater reliance. If a pure article can be obtained a pleasant combination of cannabis indica in extract combined with ergot and valerinate of quinin for the pain of fibroid menorrhagia may be employed with advantage. The extract of cannabis indica in from $\frac{1}{4}$ to $\frac{3}{4}$ of a grain, the ergotin in from $\frac{1}{2}$ to 1 grain, and the valerinate of quinin in 2 grain doses, makes a powerful uterine tonic, the cannabis indica and the valerinate modifying the pain which otherwise would be aggravated by the necessary effects of ergot and quinin.

Hyoscyamus, belladonna and stramonium are valuable sedative remedies to employ as alternatives in the long medical treatment which one is often obliged to conduct before these patients decide to have radical means adopted. While one sedative, hypnotic or anti-irritant remedy after another is being employed these remedies will often give surprising aid as a temporary substitute for remedies which for prudential reasons we feel should be discontinued. The active principle hyoscyamin or atropin may be given in solution in appropriate doses. Or may be given in the small granules which are so accurately compounded by the large manufacturers of pills. I frequently combine these drugs with the valerinate, the two making very effectual sedatives or anti-nervous remedies.

Gelsemium, valerian, and asafedita are very valuable drugs, which can be employed with success in the treatment of fibroids. Extract of gelsemium, combined with valerinate of quinin, zinc and iron, acts as a very reliable aid as a mild anti-neuralgic, while in asafedita we have a remedy which the physician could ill afford to lose. Good full doses of asafetida, 4 to 8 grains, four times a day has carried many a nervous, sleepless, hysterical woman successfully through what otherwise would have been a painful menstrual period.

Opium is a dangerous remedy to employ for the pain of fibroids. The remedy is so prompt and efficient with the majority of patients that it is an easy matter for a dangerous habit to be contracted, inasmuch as the difficulty is a chronic and constantly reverting one. If in desperate cases it is considered wise to employ the drug temporarily, it should be presented by the physician and given, if possible, without the patient becoming aware of the contents of the dose. A condition serious enough, however, to demand the use of opium should also demand some permanent radical means of cure.

Astringents.—Local astringents include such drugs as may be employed with curative benefit by applica-

tion to the mucous membrane of the uterus or by application to the neck of the womb through the vagina. Local astringents may be employed, too, for the temporary effect they may have on the secretions of the uterus or for the direct curative effect they may exert when applied to the mucous membrane of the fibroid womb. When the astringents are applied to modify temporarily the secretions of the uterus, for instance the excessive blood flow, it is best applied on tampons. Alum is cheap and one of the safest and most efficient astringents to use in this way. Wicking, or strips of gauze, or cotton tampons may be prepared and kept for emergencies, by dipping them into a 20 per cent. solution of alum in hot water and then evaporating the water of solution by exposure to the air. This leaves the alum thickly deposited in the interstices of the material. It is only necessary then to apply the tampon directly to the bleeding cavity, allowing the fluids of the cavity to dissolve the alum, or it can be placed in warm water immediately before applying. Excessive bleeding from the uterus which fails to yield to other remedies will seldom fail to be controlled by well placed uterine tampons well saturated with alum. Wicking or strips of gauze without knots is the best material to employ. The patient should be placed in Sims' position, the neck of the uterus grasped with a strong tenaculum, so as to expose the canal, then by means of a bulbous-pointed uterine sound, the material should be systematically packed to the bottom of the uterus. Only where the hemorrhage is alarming is this procedure necessary. In ordinary bleeding a well-placed vaginal tampon alone is necessary. For vaginal tampons, Byford recommends compressed sponges saturated with alum. They are made by taking a fine sponge, large enough to fill the vagina, passing a strong string through the center to aid in its removal, and then after dipping it in the solution of alum, well winding it with twine from one end to the other, compressing it into as small a space as possible. The twine should so compress the sponge as to make it assume an elongated form. It should then be laid aside and permitted to dry. Several of these should be kept on hand by the patient, she having been previously instructed how to employ them. After compression and drying it will be of small size, and such shape that it can be easily introduced into the vagina, while the moisture of the parts will soon cause it to expand into an efficient tampon.

Astringents when applied to the mucous membrane of the uterus, are applied ordinarily for the curative effect they may exert on the inflamed endometrium. For this purpose the tincture of the chlorid of iron is a popular astringent. I have employed with benefit a 10 per cent. solution of chlorid of zinc in glycerin and water. Varying strength solutions of nitrate of silver have been employed. This is objectionable, however, because of the indelible stain produced by it. There is such a large variety of well-known astringents which may be employed for this purpose that it seems like needless waste of time to enumerate them.

The application to the mucous membrane should be made, after the cervix has been exposed, by means of a flexible applicator wrapped with cotton. The canal should first be wiped free as possible of all secretion by means of the applicator and cotton and when that is accomplished the mucous membrane should be thoroughly painted with the astringent by passing the applicator, well wound with absorbent cotton, and saturated with the drug, to the bottom of the uterus.

General Astringents.—Of the astringents which reach the uterus and modify nterine hemorrhage when given internally I know of none which compares with hydrastis canadensis. It contracts the blood vessels and modifies the hemorrhage. It is so efficient that one is led to believe that it has a direct contractile effect upon the muscular walls of the uterus and tumor. While it acts as an astringent with special predilection for the uterus it also is efficient as a bitter tonic. The fluid extract may be given in doses of a third to one-half a drahm three or four times a day. I frequently combine the solid extract with ergot in grain doses of each in form of capsules, one three or four times a day. This drug actually seems to possess a curative effect not only in diminishing the amount of the blood discharge but also in decreasing the size of the tumor. When employed to modify hemorrhage it should be given in good maximum doses of one-half to three-fourths drachm of the fluid extract three or four times a day during menstruation. If it is to be employed as a direct curative agent it can be more conveniently and elegantly administered in capsule form as already indicated either alone or combined with other uterine tonics.

Tincture of cannabis indica in from four to ten drop doses given during the approach and continuance of menstruation not only modifies irritation but also acts as an astringent and hemastatic.

Special uterine tonics.—Ergot has occupied such a conspicuous and important role in the treatment of fibroids of the uterus that I deem it advisable to devote a special article to its consideration.

The foregoing article can be briefly summarized as follows:

1. The medical therapeutics of fibroids of the uterus are divided into general tonics, alteratives, sedatives, astringents and special uterine tonics.

2. General tonics: Judicious and systematic feeding; bitter tonics including quassia, calumba, nux vomica and cinchona; iron; prepared foods of all kinds. Nerve tonics: The hypophosphites; strichnia and manganese. Bowel tonics: Aloin and cascara sagrada. General stimulants: Hot salt baths; sea salt baths, warm or cool; massage. Local tonics: Hot vaginal douches. Cltmate: Change of residence, travel and ocean voyage.

3. Alteratives: Arsenic; muriate of ammonia; mercury; iodin.

4. Sedatives: The bromids; the coal tar antipyretics; chloral; asafetida; valerian; gelsemium; hyoscyamus; opium.

5. Astringents: Local, alum; chlorid of zinc; preparation of iron. General astringents: Hydrastis; cannabis indica.

6. Special uterine tonic: Ergot.

Treatment of Syphilis.—The Société de Dermatologie has been considering the question of mercurial injections in syphilis, devoting two meetings to it. The conclusions seem to be that its use should not be limited to severe cases, but that it is beneficial in all, and the best means of administering mercury, on account of its reliability, rapidity, and the intensity of its action. Le Pileur has treated 600 cases with injections of gray oil, which he especially recommends. Hallopeau and others prefer to this injections of calomel.—*Progrès Médical*, February 8.

THE PROPER INDICATIONS FOR REPAIR OF PATHOLOGIC LACERATIONS OF THE CERVIX UTERI, AND THE PROPER OPERATIONS TO MEET THEM.

Read at the meeting of the Mississippi Valley Medical Association, at Detroit, Sept. 5, 1895.

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The recognition of a distinct pathologic bearing of many parturient lacerations of the cervix uteri, and the devising of one of the operative procedures for repairing the injury, by Dr. T. A. Emmet, is probably one of the foremost improvements in minor gynecology in the last twenty-five years. And although the Emmet operation is essentially incompetent to meet all the indications in all properly selected and prepared operative cases of this nature; still its name might be fairer had its importance not been overestimated in the beginning; had it not in a large proportion of instances been ignorantly or carelessly pressed into service, where or when no operation whatever on the portio vaginalis was indicated; or if it had always been properly executed. But the Emmet operation is not the only one that has suffered such abuse. Most other procedures upon the cervix or its canal can make equal claims for redress and limitation to proper indications.

In this connection it is pertinent to note that to one who comes frequently in contact with general practitioners as in consultations or in post-graduate classes in gynecology, it becomes very evident that their views of pathology in the female pelvis are based altogether too much upon things they find in the gynecologic vestibule—the vagina—as seen through the speculum or felt with a finger or two, with one hand only. While these intelligent gentlemen, successful general practitioners, ambitious to be up with the times, are well aware of the fact that the most important portion of the generative organs is located higher up, they seem possessed of the idea that whatever exists up there, aside from marked tumefactions and displacements, must have had its origin below somewhere in the vaginal portion of the uterus or its canal; that something must first be repaired or straightened out there before any disorders above can get better; that when the former has been done, the latter will follow of their own accord "in time" and with "proper care;" that repairing the sheepfold at the place where the wolf entered will make good all the ravages that he committed within, is the delusion to which they are still led on by the original positive statements of the promotors of trachelorrhaphy in their text-books, who said that subinvolution, metritis, retroversion of uterus and tender ovaries would practically be done away with by removal of the "cicatricial plug" and overcoming the ectropion. Gynecologists generally know now from experience usually well paid for, that this is not so. They know that organic disorders of pelvic organs located above the vagino-abdominal diaphragm that have arisen as ulterior effects of cervix laceration, become separate entities and require treatment suited to themselves nearly the same as if no lacerated cervix figured in the case; and they know, moreover, that when such a policy of treatment is carried out the patient very frequently recovers enduring health without any cervix operation. While such knowledge is in possession of able specialists who are familar with the opinions and experiences of most of the world's authorities and greater operators, it has not penetrated through the general rank and file of honorable and efficient general practitioners, who naturally have not the time to thresh the great international stack of medical journals, society reports, etc., but are limited to the opinions of a few authorities briefly expressed in the text-books. The text-books are the principal guide to general practitioners in matters apart from general menicine, and oftentimes in the whole domain of medicine and surgery. I am constrained to attribute much of the defects and inconsistencies in gynecology as it is practiced by general practitioners and some self-styled specialists to the text-books; and chiefly to those of our own glorious country.

Thus while Emmet in the 3d edition (last) of his "Principles and Practice of Gynecology," admits that he would not do trachelorrhaphy in a number of conditions where he had previously operated, he inconsistently retains a most unfortunate and unguarded statement from the previous editions. He opens the chapter on this subject by saying: "The importance of this injury can not be exaggerated;" (!) since at least one-half of all the ailments among those who have borne "children are to be attributed to laceration of the cervix."

To say that one-half of all the gynecologic ailments, even of parous women are due to this cause, would be an exaggerated statement which the experience of the last twenty-five years has abundantly disproven. And to say that half of all the ailments—general, medical and surgical included—are due to this is so much greater an error. For the feminine body, minus its generative organs, does have ailments also, quite as well as that of the male minus its sexual organs. And if we, for the sake of generosity in argument will assume that half of all the ailments of parous women come from their reproductive organs, and the other half from all the rest of their bodies combined; then the logical conclusion would be that laceration of the cervix uteri causes all the gynecologic ailments in parous women, if Dr. Emmet's dictum were correct.

Thus, we have a praiseworthy subject crippled at its introduction by an unfortunate exaggeration of its importance by its own author; and is it surprising then if thousands of practitioners and scores of improvised specialists, who justly bow to the fruitful views, valuable suggestions in treatment and authority of Dr. T. A. Emmet on nearly every other gynecologic subject, have looked to the cervix uteri and no further, for the source of nearly all gynecologic disorders, and have operated for imaginary sources of irritation more frequently than for real ones? They can not all know that six years later (1890) in an excellent paper at Toronto, Canada[1], he trimmed the indications for his operation down to "relief of certain reflex symptoms accompanied by more or less impaired nutrition, and to guard against the occurrence or epithelioma," after ample previous treatment; and that, to escape the need of trachelorrhaphy, he advised a potent course of treatment of the parts during the puerperal state consisting of hot water vaginal douches, weak sublimate intra-uterine irrigations, Churchill's tincture to the cervix and vaginal vault, three to four weeks recumbency, ending in efficient tamponade of vagina when

[1] Canadian Practitioner, vol. xv., p. 343.

indurations above or descent of the uterus exist.

And while the other more recent text-books have taken a fairly reasonable view of trachelorrhaphy, they state merely the "Emmet pathology and treatment of this subject" and fail,—

1. To proclaim and to reiterate, with emphasis, the important principle or rule of action, that a complete diagnosis of the woman and of her pelvis must be made before any operation whatever on the gynecologic uterus is permissible; that by skillful and well disciplined bimanual palpation, almost wholly, in anesthesia when required, the position, mobility, size, shape, consistence and tenderness of the entire uterus, the location, mobility, size and tenderness at least of usually both ovaries, and any material departure from health in the tubes, ligaments and pelvic peritoneum must first be secured before the question of indication for cervix operation of any kind can be decided.

2. The text-books fail to impress upon their readers as irrevocable common law, that aside from some reflex neuroses, all organic pathologic conditions above the vagina that follow by infection and otherwise, in the retinue of cervix laceration, become separate objects for treatment, independent of the cervix, and should receive such treatment previous to the repair on the cervix, or in the same narcosis with that operation.

The substance of such rules and principles prefaced to each of the principle minor operations in the text-books, would soon eliminate the frequent instances where pathologic conditions of a minor grade, receive an impetus in the wrong direction which lands them where major operations only can avail; when a correct understanding of the whole case and supporting of nature's processes would have secured more nearly a normal woman by minor means.

As to the Emmet operation, time forbids that I should quote the numerous derogatory statements in the literature by thorough gynecologists as to its poor, bad and positively harmful results. Such are known to all men in extensive general and special practice. And, alas! among the laity they have too often been stumbling blocks that have induced women who needed other very important operations, to while away their day of grace.

There are many who eulogize trachelorrhaphy. But their number is constantly decreasing and they are usually young aspirants who, with broader knowledge and more experience, will become more reserved in their statements. The critics of this operation usually ascribe its negative results to its being done defectively or out of place. But I hope to show by touching upon the several views of the pathology, and a brief review of the morbid processes in childbed that the operation is itself unable to cover the whole ground.

A view that is entertained by many, chiefly Europeans, and expressed by Wm. R. Pryor,[2] is, no doubt, correct in many cases; viz., the cervix that tears is usually one that was hypertrophied or hardened previous to pregnancy; that it was then in a state of fibrosis or connective tissue hyperplasia, viz., a diseased cervix, and therefore tore; that the erosion is caused by the outflow of purulent discharge from the associated endometritis, so that if any operation at all is indicated it is curettement and amputation of the cervix; that sewing such lips together is worse than nothing.

[2] Amer. Jour. Med. Sciences, 1894, vol. 107, p. 669.

2. The view of Schroeder is, no doubt, also often nearest the truth; that lacerations of the cervix being so frequent that they may almost be looked upon as physiologic, in themselves tend to heal spontaneously unless something gets into them and prevents coaptation of the torn surfaces. And this obstacle is presented by the previously diseased catarrhal mucous membrane lining the canal. And as the canal is flat and has acute angles laterally it prevents the healing of those tears mostly that occur on the sides. And therefore extirpation of this diseased lining of the canal with its degenerated mucous glands is indicated, with reunion of the severed lips when necessary.

3. The view of Emmet assumes the deeper muscular and fibrous tissues of torn cervices to have been healthy previous to pregnancy and labor, and regards the laceration as the original evil, causing disease of columnar mucous membrane by its exposure. He assumes that involution in the cervix is arrested, because its lymph and vascular channels are laterally obstructed by cicatricial formations in the angles of the tears. This does not seem rational when, as he assumes, these channels are in action in the interior—the greater portion of the cervical lips.

When lacerations occur in cervices whose mucous lining and other tissues were perfectly healthy before pregnancy, the Emmet order of events is correct. But while each of these three views presents a part of the whole truth, we need to ascribe more importance to the element of infection, inflammatory action and its residua.

According to the investigations of Doederlein,[3] Burguburu,[4] Williams[5] and Burkhardt,[6] the vagina of every pregnant woman contains saprophytic germs and in nearly half of all cases, pathogenic germs are present in it. In recumbency the vagina of the puerperal female is almost never empty but is simply overflowing most of the time. This basin presents admirable conditions for bacterial culture and the fluid contained in it is never strictly aseptic, although it contains pathogenic germs in only about 40 per cent. and the dangerous streptococci in 4 per cent. of cases unmodified by douches, examinations, etc. It will arouse a variable degree of inflammation in the lacerated cervix that is either immersed or periodically dipped in this fluid, even when it can or does not induce puerperal fever. Such inflammation will not be limited superficially to the torn surfaces but it will engage the columnar mucous membrane and muscular and connective tissue substance of the bodies of the severed lips.

Involution is arrested by the inflammation which converts it from the state of subinvolution into that of fibrosis or connective tissue hyperplasia. Thus, if the cervix was not hard and diseased previous to pregnancy, it becomes so now. The hard tissue encountered by the needle in the Emmet operation is formed. It is studded with diseased submucous glands and is more of an irritating focus than are the much smaller cicatricial plugs removed by the Emmet procedure. And the enlarged Nabothian follicles that are distributed beneath the mucous membrane deeply in the diseased bodies of the cervical lips must be regarded, not merely as hypertrophied glands, but as a graver feature tending toward malignancy, in view of facts learned by extended histologic

[3] Archiv f. Gynecologie, Bd. 40, pp. 99 and 306.
[4] Archiv f. Experimentelle Pathologie u. Pharmacol.
[5] Amer. Jour. Med. Sciences, July, 1893, Bd. XXX, p. 463.
[6] Archiv f. Gynecologie, Bd. 45, Hft. 1.

studies of the earliest malignant infiltrations here. Therefore, extirpation of all tissues containing such cystic follicles is needed, and not merely puncturing them and then hiding them, as is done in the Emmet régime.

Now in order to do away with the customary guesswork with which physicians have usually plied the question, whether a given case required operation or not; and on the principle that the laceration itself, *per se*, is innocent, that its evil results alone are pathologic and may need removal in cases where they have supervened,—I analyze these results under the following four points, which must be objectively demonstrated by touch, and can be guessed at only by sight. They are:

1. *Cervical Diastasis at the Vaginal Attachment*, produced only by very deep lacerations that extend above the vaginal insertion. Then traction of the anterior and posterior vaginal walls may draw the torn flaps of the cervix apart and will usually tilt the fundus backward. All tears that do not extend beyond the portio vaginalis uteri, and whose torn surfaces are covered by normal vaginal mucous membrane and that are bounded by normal elastic and flexible cervical tissues throughout the entire cervix, are not pathologic, no matter what be their depth.

2. *The Cicatricial Plug or Wedge* at the bottom or angle of each tear.

3. *The Columnar Mucous Membrane* lining the outer portion of the cervical canal and covering the inner side and tips of the everted cervical lips, which is diseased by hypertrophy and adenoid degeneration, and is commonly called "an erosion."

4. *The Indurated Body of each Lip*, meaning the entire stratum of hardened cervical tissues in each lip, which underlies the membrane last mentioned, and embraces most of the Nabothian follicles.

Two or more of these four features must be present in any given case before we can say that the cervix may possibly be a source of irritation, or is pathologic. But to say that it is such, that it is what makes the woman sick, is another question altogether; and before we can answer it we must make a general diagnosis of the entire woman and a detailed one of her pelvis, not merely of the vaginal vestibule. We need to be aware of every anatomic and functional derangement that may be present in any of the other principal organs or systems of the body, before we can possibly judge fairly how much of the patient's sickness is due to these, and how much to her pelvic conditions. And then, coming to the pelvis, we must not let our eyes and a speculum deceive us and be overawed by cosmetic infringements in the vagina. But when the intestines have been properly emptied of feces and gas and the bladder is empty, we must by simple digital palpation, and by vagino-abdominal (bimanual) or by recto-vagino-abdominal (trimanual) palpation search for the four pathologic features about the torn cervix; determine the position mobility, size, shape consistence and tenderness of the entire uterus; ascertain the location, mobility, size, tenderness and contour (as to cystic follicles) of usually both ovaries; and find out any material departure from health in the tubes, ligaments and pelvic peritoneum. Nor dare we overlook anything about the rectum, perineum or bladder. Not until we have thus surveyed the entire pelvis and have carefully weighed the pathologic hearing of every abnormal feature in it, can we possibly judge as to the harmfulness or innocence of lesions about the cervix, be they ever so marked.

Distinct extra-uterine swellings, aside from mere thickenings and retraction of ligaments, when they continue longer than six or eight weeks after a labor, miscarriage, or other occasion for inflection, are not cellulitis, as expressed by Emmet, but disease of appendages, and adjoining peritoneum, or the results of such disease; or they are neoplasms: and they will contra-indicate all cervix repair as long as they give pain locally, or are markedly tender on pressure, or are aggravated by the passage of a galvanic current of moderate amperage through them; unless in the judgment of a competent gynecologist they are amenable to minor means, and it is thought that their chances would be improved by eliminating a suspicious endometritis by a thorough curettement, packing, etc. Then the cervix operation may be done also incidently.

When, as is so frequently the case, a lacerated cervix is accompanied by a retroversion or flexion of the uterus, and is adherent or not normally movable, especially when one or both ovaries are also descended, operating on the cervix is contra-indicated until all adhesions and other hindrances to normal anteversion have been overcome by the usual means, supplemented by skillful pelvic massage. If this proves to be unavailing in competent hands, then curettement and intra-abdominal work will be needed, not to remove anything unless it is hopelessly diseased, but to liberate the organs and to secure them in their proper positions; and not merely a little whittling enterprise on the cervix; that would but aggravate the principal disorders. But in 95 per cent. of all such cases pelvic massage will achieve this liberation of the organs and will restore them to their proper realms, with nothing but their own weight to hinder them from remaining there.

When this preliminary victory has been gained, and not until then, the following series of operations is in order, which I do usually in one narcosis:

1. Curettement and packing, to take care of the coexisting endometritis and to make a surgically clean field.

2. Operation for lacerated cervix.

3. To hold the uterus in anterversion, shortening of the round ligaments is most serviceable and satisfactory in the great majority of well prepared cases. But ventro-fixation will have to be chosen for some, and vagino-fixation for others.

4. Posterior kolporrhaphy and perineorrhaphy are often required to meet all indications.

Endometritis is the regular accompaniment of all pathologic lacerations of the cervix; and any secondary operation for cervix repair, without a preceding careful, and intelligent curettement or without a narcosis, is botchwork.

PROPHYLACTIC TREATMENT.

Large tears that occur in hospitals and elsewhere, when a competent nurse and appointments for aseptic detail are at hand, should be sewed up primarily within a few hours after labor; as has been done and advised by Pallen, A. P. Dudley,[7] Garrigues,[8] C. Kollock,[9] C. C. Barrows,[10] H. T. Byford,[11] and many others. But whether they be sewed up or not, sur-

[7] Amer. Jour. Obstetrics, February, 1895.
[8] Amer. Jour. Obstetrics, 1891, vol. XXIV, p. 1329.
[9] Tr. Amer. Gynecol. Soc., 1891, vol. XVI, p. 295.
[10] New York Med. Jour., 1891, vol. LIII, p. 530.
[11] H. T. Byford, Tr. Ill, State Med. Society, 1894, p. 495.

gical cleanliness of the parts should be maintained by suitable douches. The evil results of a tear are alone pathologic; and these may be largely prevented by eliminating the element of infection and inflammation, by interfering with the developments of both pathogenic and saprophytic or fermentation germs. This declaration is testified to by: 1. Dr. T. A. Emmet, who says that in cases where the stitches are taken out on account of infection a few days after trachelorrhaphy has been done, and the cervix is not re-united, but the freshened surfaces are allowed to glaze over with a vaginal mucous membrane under efficient hot water douches and other guards against infection, the benefit to the patient's health is about the same as if it had all primarily united.

2. This declaration is testified to by the fact, which can frequently be observed, that lacerations in the cervix that have been protected from constant or frequent contact with fermenting or positively septic lochia by antiseptic, or aseptic vaginal, or vaginal and intrauterine douches, skillfully administered, will afterward be found healed over with shining vaginal mucous membrane and not associated with the pathologic features which I have detailed. Therefore the vagina should be redeemed from being an undisturbed culture bed for germs.

CHOICE OF OPERATION.

In the rare instances where only gaping of the cervix at or above the vaginal attachment exists, or the cicatricial plug alone, or both of these together, *i. e.*, Nos. 1 and 2 of my pathologic features, with no diseased columnar mucous membrane and no indurations or cystic follicles in the body of the lips, the Emmet operation will fill the indications. This will be more likely in cases of early trachelorrhaphy, as it is named by J. J. Mulheron,[12] who advised sewing up tears in childbed about two weeks after labor.

But in some of these early cases even, and in nearly all cases that really need operation later on, the principal indication for removal is presented by points 3 and 4 of my description; viz., the diseased columnar mucous membrane covering the longer median portion of each lip, and the entire mass of indurated cervical tissues composing the body of each lip and containing most of the dangerous submucous cystic follicles.

These principal sources of irritation and of malignant developments the Emmet operation can not cope with, without doing more harm than good by impairing uterine drainage. In at least four-fifths of all secondary cases the entire indications are best fulfilled by a suitable adaptation of the operation devised by the lamented Schroeder of Berlin, for excision of catarrhal mucous membrane from the cervical canal. It was published by him in this country in 1882. It is as follows:

1. Exsection of the cicatrical wedge at the bottom of each tear by two suitable incisions which meet near the internal os, forming acute angle with each other. When there is only a unilateral tear and diseased cervical tissue and membrane are to be removed, then one simple temporary incision of equal depth is made in the cervix at a point opposite the tear. By holding the two cervical flaps thus made apart by bullet forceps, the entire cervical canal becomes accessible.

2. A cross-cut is then made on one lip extending in length to about one-eighth or one-fourth of an inch from the lateral boundaries of the cervix, and of sufficient depth to pass through the mucous membrane and all indurated cervical tissue beneath it. This cut is made as high up in the cervical canal as is needed to remove all diseased parts and still admit of the subsequent suturing. From this incision downward to the end of the lip, the entire mucous membrane and with it all the adjacent hard cervical tissue, with all the diseased follicles in it, is removed in one piece, so that a hollowed-out flap of the soft and flexible outer vaginal portion of the portio vaginalis is left. This is then flexed inward upon itself, and its end sutured by four to six catgut sutures to the projecting shoulder above (and created by) the transverse incision.

3. The other lip is next treated in the same manner.

4. Finally, three or four silkworm-gut sutures are introduced on each side similarly to the Emmet sutures.

Thus a short and broad cervix or portiovaginalis is made, whose external portion is lined by squamous epithelium that will never degenerate as the less resistent columnar mucous membrane does, from numerous local causes, and stenosis of the cervical canal is never invited, as it often is by the Emmet operation.

[12] Canadian Practitioner, vol. xv, p. 346

A CONSIDERATION OF THE VALUE OF THE ALEXANDER OPERATION COMPARED WITH THAT BY ANTERIOR FIXATION OF THE UTERUS.

Read before the Gynecological Society of Boston, Feb. 13, 1896.

BY AUGUSTUS P. CLARKE, A.M., M.D.
CAMBRIDGE, MASS.

Alexander's operation seems from the most recent experiences to be indicated only in those cases of backward displacement that are not complicated with adhesions and pelvic contraction. When the displacement is due to morbid processes connected with the Fallopian tubes and ovaries the Alexander operation would be for the most part contraindicated. The operation can only be resorted to with advantage in cases of mere relaxation of tissue. In cases of adhesions it is plain that the contracted parts would draw upon the bladder. In uncomplicated cases the operation would insure the uterine fundus, being held over the bladder more in accordance with its normal relation than can be secured by a resort to the other surgical procedures. Speaking from my own experiences and observations I should say that the indications for Alexander's operation are extremely limited. The operation, though a delicate one, is often quite formidable and, unless its application is narrowed down to the cases in which it must be employed, the measure for relief will prove a failure. Most of the apparent cures following the Alexander operation result not so much from its adoption as from the measures employed to relieve many concomitant lesions. Metritis, endometritis, salpingitis and ovaritis are conditions that often accompany retro-position. Curettage and other surgical expedients employed for the relief of these affections are often most helpful in overcoming displacement. Some operators employ for some weeks after the operation as a precautionary treatment different forms of pessaries. Careful and judicious application of iodoform gauze tampons is sometimes preferable to the use of the regular pessaries. The employment of such means and the keeping of the patient in bed or at rest contribute no doubt to the relief experienced. The special features of treatment such as rest and the

securing of greater nutrition may often assist materially in lessening the retro-position. Some have reported cases in which the Alexander operation has been employed for overcoming prolapse. The results of such cases must be regarded as negative, for the reason that the proper function of the round ligaments is rather to prevent a backward than a downward displacement.

Mr. Bland Sutton tells us that except in the human female the round ligaments are found only in the chimpanzee and the higher apes. The function of these ligaments in those animals is also to prevent retro-displacement. In downward displacement or prolapse other surgical procedures, such as anterior colporraphy, and, in intractable cases, vaginal hysterectomy are the means resorted to for a cure. In cases when inflammation and laceration are the causes, curettage of the uterine cavity, trachelorrhaphy and perineorrhaphy may have to be employed. In cases of backward displacement in which there are adhesions abdominal section or celiotomy (hysterorraphy) may advantageously be employed. This is especially indicated when the retro-position continues after other lesions have been attended to. Certainly hysterorraphy is more dangerous than the Alexander operation. In hysterorraphy or anterior fixation it is surprising to observe what a small band of union will keep the uterus properly anteposed after it has been restored. It is the intra-abdominal pressure that is exerted from behind as well as from before or from above that sustains the uterus in its normal position over the bladder. When, however, the uterus has undergone a backward displacement the intra-abdominal pressure is merely downward upon the organ. Pressure high up, or drawing from below tends to overcome the supports rendered by the round as well as by the utero-sacral ligaments, and so gives rise to the retro-position. The shrinking or the contraction that generally takes place in the round ligaments may serve to restore the displaced uterus. In some cases the round ligaments are very frail and may be found to have undergone fatty degeneration and atrophy. Anterior fixation through an abdominal section may, after the appendages have been removed, be effected by suturing the pedicles to the peritoneum and subperitoneal fascia on each side of the incision; in such cases a single suture passed through the uterine wall may suffice. There will, therefore, be less traction or sense of discomfort complained of by the patient before she has become accustomed to the presence of the uterus in its restored position. The fixation in this manner for the most part in any case gives rise to unnatural sensations. The Alexander operation, when successfully performed, is a more scientific procedure, though there is danger of establishing a too firm fixation in this direction. Ventro-fixation may interfere very seriously with the progress of pregnancy, and should rarely be resorted to in virgins or in women who have not reached the menopause, unless the adnexa have been removed by reason of disease or morbid changes. Vaginal fixation is sometimes employed as a means of relief for retro-position. The extended incision rendered necessary to effect a separation of the bladder from the vagina may lead to troublesome vesical symptoms. Some operators advise that the inner surface of the ligaments on either side be scraped and their raw surfaces be folded together and sutured. The sacro-uterine ligaments may be folded through an abdominal or a vaginal incision. The history of the results of such surgical expedients has not been as satisfactory as that of the relief obtained from the Alexander operation and hysterorrhaphy. It should be again observed that the Alexander operation as well as hysterorraphy when resorted to in women who have not reached the menopause may so firmly fix the uterus as to interfere seriously with the development of a normal pregnancy.

The patient should be made aware of the full consequences of either operation and be made to recognize the possibility of not being able afterward to carry a child to the completion of pregnancy. In certain cases of retro-position when the patient is to remain unmarried, or has passed the menopause, these measures of relief may be excellent expedients.

LOCOMOTOR ATAXY ASSOCIATED WITH SYPHILITIC CEREBRO-SPINAL MENINGITIS.

Read at the meeting of the Chicago Academy of Medicine, held February 14, 1896.

BY SYDNEY KUH, M.D.

CHICAGO.

Late Assistant to Professor Erb, of Heidelberg; Professor of Nervous Diseases, Post-Graduate Medical School; Attending Neurologist, St. Elizabeth and Michael Reese Hospitals, Michael Reese Hospital Dispensary and U. H. C. West Side Dispensary; Consulting Neurologist, Home for Aged Jews and Home for Jewish Orphans.

For some years we have known that syphilitic disease of the spinal cord may simulate the symptoms of locomotor ataxy. More recently we have learned that tabes dorsalis may occur simultaneously with true syphilitic lesions of the spinal cord or its membranes. In 1890 when examining the central nervous system of a patient who died while suffering from locomotor ataxy for changes in the cortex of the brain, such as had been described by Jéndrassik but a short time previously, I was surprised to find changes in the membranes of the brain and spinal cord, such as had not before been seen. The history of that remarkable case and the result of the microscopic examination were as follows:

The patient, a well-known actor, 36 years of age, had had an ulcus glandis penis when 20 years of age. He had a course of inunctions and never suffered from secondary symptoms. His occupation exposed him to frequent sudden changes in temperature and necessitated a good deal of intense mental exertion. There was no neuropathic disposition in his family; he had never used tobacco or alcohol to excess, and had never suffered any trauma. In 1887 he had a sudden attack of vertigo. Very shortly afterward he was examined by Professor Erb, of Heidelberg, who found the following symptoms: Impotence, wide and unequal pupils which did not react to light, slight swaying when eyes were closed, absence of knee jerk, slight diminution of sensibility, particularly to pain in the toes of both feet. After forty inunctions and continued electric treatment there was some improvement. During the following year the patient suddenly became worse. There was ataxy, more marked swaying oculis clausis, greater impairment of sensibility and paresthesiæ in lower extremities and in the ulnar nerve, lancinating pains. In September of that year Charcot's joint developed in the right knee and the beginning of a similar condition in the left knee became noticeable. In March of the following year he died quite suddenly. Up to the last day his mind had remained perfectly intact.

At the post-mortem examination the bones of the skull were found to be very much thickened. The heart was enlarged. There was degeneration in the posterior columns of the spinal cord, but the record contains nothing about changes in the membranes. The spinal cord and brain, the pneumogastric nerve, cerebral and spinal arteries and part of the cauda equina were hardened in Mueller's fluid and stained with Weigert's hematoxylin, borax carmin, alum carmin and Delafield's hematoxylin. In order to render the results as reliable as possible normal material was hardened and stained by exactly the same methods.

The changes found were briefly as follows: Typical tabetic changes in the spinal cord, most pronounced in the lumbar region. On a level with the upper portion of the decussation of the pyramids some of the axis cylinders in the columns of Goll and Burdach were swollen, others atrophied; the medullary sheaths were broken up into globular fragments, while the neuroglia was totally unaltered, or in other words, purely parenchymatous degeneration had taken place. Besides this we found peri-, end-, and mes-arteritis in the vessels of the membranes of both the spinal cord and the brain, and a leptomeningitis which extended from the cauda equina to the cerebrum, involving the convexity of the brain to a greater extent than its base. The cause of the sudden death was probably a series of minute fresh hemorrhages in the immediate neighborhood of the nucleus of the pneumogastric nerve. In the dentate nucleus of the cerebellum the nerve cells were undergoing a process of degeneration, a condition which according to recent investigations by Jellinek (Ueber d. Verhalten d. Kleinhirns bei Tabes dorsalis. *Deutsche Zeitschrift f. Nervenheilkunde*, 1895, VI, Bd. 3 and 4, p. 231) appears to be a common occurrence in tabes. That the meningitis was of a syphilitic nature was proven by the existence of a typical gumma in the pia mater of the anterior portion of the cervical region. In the pneumogastric nerves the blood vessels were increased in number, their walls contained an abnormal number of nuclei, were thickened, infiltrated with round cells here and there. Similar accumulations were seen between the nerve fibers and some of the latter were distinctly diseased, the changes being similar to those described in the region of the decussation of the pyramids.

Since the publication of this case a number of similar observations have been placed on record by others.

Thus Dr. Jegorow,[1] at a meeting of the Society of Neuropathologists and Alienists of Moskau held on Jan. 18, 1891, reported a case in which the symptoms of tabes (absence of deep reflexes, Argyll-Robertson pupils, sensory disturbances) were associated with inferior paraplegia and atrophies and the post-mortem revealed the changes characteristic of locomotor ataxy, meningitis in sacral region, syphilitic disease of the blood vessels and a number of fissures in the spinal cord. In the same year Dr. G. Marinesco[2] reports four cases of locomotor ataxy in at least two of which tabes was combined with tertiary syphilitic lesions in the central nervous system.

In 1892 Dr. M. Dinkler,[3] of Heidelberg, read a paper entitled: "A Case of Syphilitic Tabes," in which he gives the history of a patient, 42 years of age, in whom the first symptoms of tabes developed nine years after the primary lesion. Clinically the case was typical: Impotence, lancinating pains, girdle sensation, Argyll-Robertson pupils, miosis, analgesia, right knee-jerk less marked than the left. The patient succumbed to a cerebral hemorrhage. Besides the tabetic degeneration there were found miliary aneurysm of the cerebral arteries, syphilitic leptomeningitis with small gummata and multiple hemorrhages.

In Minor's[4] case a woman, 26 years of age, developed the symptoms of a myelo-meningitis of the dorsal region five years after the probable infection. To these symptoms were added those of locomotor ataxy, such as absence of deep reflexes, Argyll-Robertson pupils, myosis, lancinating pains. After treatment with mercury the paraplegia disappeared, while the symptoms of tabes remained unchanged. Here, too, cerebral lesions were the cause of death, and the post-mortem showed not only that the diagnosis of locomotor ataxy had been correct but that in addition to this a diffuse syphilitic leptomeningitis with gummatous periarteritis in the spinal cord had existed.

A seventh case, that published by Dr. M. Nonne,[5] was somewhat more complicated. His patient, a man 44 years old, had a chancre in 1870. Seventeen years later ataxy, Romberg's symptom, myosis, Argyll-Robertson pupil, absence of deep reflexes and atrophy of optic nerves were found. In 1890 subacute paraplegia developed in the upper extremities. Death one month later from apoplexy. Again the changes characteristic of tabes were found in the spinal cord and added to these gliomatosis beginning in the upper cervical region and extending down to the level of the tenth dorsal nerve, a fresh focus of necrotic softening in the cervical region, chronic cerebral leptomeningitis, end- and mes-arteritis of the basilar artery.

Finally, an additional observation of this kind has been published by Dr. B. Sachs[6] about two years ago. Here we again find the symptoms so often enumerated: Ataxy, lancinating pains, absence of deep reflexes, Argyll-Robertson pupils, miosis, Romberg's symptom, and in addition to these gastric crises and slowness of sensory conduction. Anatomically the typical sclerosis of the posterior columns, syphilitic leptomeningitis and typical specific arteritis existed.

A ninth case published by Dr. C. A. Ewald[7] is mentioned in some of the papers on this subject, but the microscopic examination showed that it was a pseudo-tabes syphilitica and not a true case of locomotor ataxy. These lesions are very probably not at all uncommon in cases of locomotor ataxy and have presumably not been described more frequently on account of the technical difficulties associated with making satisfactory microscopic sections of the central nervous system when the membranes have not been previously removed. The dicovery of true syphilitic changes in the central nervous system proper or its membranes may well be mentioned as an additional factor in the support of Fournier's theory, that locomotor ataxy is very often, if not always, the consequence of a specific infection.

Since this paper was written I have looked over some older specimens prepared in the laboratory of the late Professor Meynert, of Vienna, and have found among them two cases with changes in the spinal membranes identical with those described in this paper, excepting that I could not discover any gumma.

DISCUSSION.

Dr. Hugh T. Patrick—The combination of ordinary syphilis of the nervous system with tabes we must consider an established fact, and there is no reason why it should not be so. A large proportion of all cases of tabes undoubtedly occur in syphilitics, and there is nothing to prevent the ordinary syphilitic lesions from being superimposed upon or combined with locomotor ataxia. In direct relation to what Dr. Kuh has said in his most instructive paper, there are two points I would mention briefly, and the first is the relation of suspension to sudden death of the patient. It has been known for a long time that tabetics occasionally die suddenly with symptoms of cerebral apoplexy, yet nothing can be found post-mortem to account for death. I believe I was the first in this city to suspend an ataxic for locomotor ataxia, and this patient died after suspension. He had, as Dr. Kuh's case did, all the symptoms of cerebral apoplexy, coming on about four hours after suspension. Macroscopically nothing was found in the brain or medulla oblongata, but whether there had been a punctate hemorrhage in the pneumogastric nucleus, I will not attempt to say. Nothing was found with the naked eye whatever. Whether suspension had any influence in producing sudden death, I do not know. The same thing has occurred in cases of locomotor ataxia before the days of suspension, and the connection may be considered problematic.

In speaking of the combination of syphilitic meningitis with locomotor ataxia, we should remember the very interesting work of Redlich, who concludes that locomotor ataxia is nearly always, if not always, the result of a chronic lepto-meningitis due to syphilis. Redlich's work is most interesting and careful. He is rather conservative in drawing his conclusions, and states the arguments both for and against his theory. What he finds is briefly this: That in the normal cord the posterior nerve roots are constricted by the pia mater at their entrance into the cord. There is a distinct constriction of the nerve root where it passes through the pia mater normally. At this point the medullary sheath is normal in many fibers, thinned in others, and in some fibers disappears. Furthermore, in the normal subject the small calibred fibers are arranged at this

[1] Neurolog. Centralblatt, 1891, x, p. 406.
[2] Uber einige d. Syphilis hervorgerufene Veraenderungen, etc., Wiener med. Wochenschrift, 1891, XLI, 51, 52, 1891.
[3] Ein Fall von Syphil. Tabes. Vortrag gehalten auf d. XVII. Wanderversammlung Suedwestdeutscher Neurologen und Irrenaerzte zu Baden-Baden am 28 and 29. Mai, 1892. Vide also Deutsche Zeitschrift f. Nervenheilkunde, 1893, III, p. 319.
[4] Hemi- und Paraplegie bei Tabes. Zeitschrift f. klin. Medicin, XIX, 5 and 6.
[5] Ein Fall typischer Tabes und centraler Gliose bei einem Syphilitischen. Arch. f. Psychiatrie, etc., XXIV, 2, p. 526.
[6] Syphilis and Tabes dorsalis. New York Med. Journal, January 6, p. 1.
[7] Ein unter d. klinischen Bilde, d. Tabes verlaufender Fall von syphilit. Rueckenmarkser kraenkung. Berlin klin. Wochenschrift 1893, XXX, No. 12, p. 284.

point of passage through the pia mater at the periphery of the trunk of the posterior roots. It is these fine fibers that go to make up the marginal zone of Lissauer, which is ordinarily the first attacked in incipient tabes. Furthermore, he finds that there are two or three regions of the cord where this constriction of the posterior roots occurs in the most marked degree, viz., the cervical enlargement, and the lower dorsal and upper lumbar regions. These are the regions first affected in locomotor ataxia. At the point where the pia mater normally constricts the posterior nerve root there is ordinarily a vessel more or less circulatory embracing to a greater or less degree the nerve root. Now, if there is any chronic change produced by syphilis which is more constant than another it is arteriosclerosis, a thickening of the vessels generally throughout the system, or localized more here or more there. Redlich concludes that at this point of normal constriction a very slight meningitis will induce a very marked change in the nerve root and in the next place, an affection of this vessel at this place will also produce relatively marked changes in the nerve fibers without very extreme changes taking place in the vessel. There is localization which coincides with the ordinary beginning place of the lesions of locomotor ataxia. Again, it has been shown very conclusively that the lesions in the cord in locomotor ataxia are practically and substantially those of ascending degeneration, which may be produced experimentally or by pathologic processes destroying the posterior roots. I would simply state this, that in considering the so-called complication of syphilitic meningitis with locomotor ataxia, we ought to consider at the same time whether the locomotor ataxia is not really the sequence of the syphilitic meningitis instead of the latter being a fortuitous complication of the former. While that is not conclusive, I think it is to be considered, for the peripheral origin of locomotor ataxia has very strong arguments to support it.

DR. J. G. KIERNAN said there was one phase of the subject which deserved a little more attention than has been paid to it, namely, whether the luetic lesions were not often the result of lues developing secondarily to the tabes rather than a primary condition. Miner, of Moscow, asserted that the cognate disease, paretic dementia, never occurred except in the victim of inherited or acquired syphilis and asked for cases in which syphilis had occurred in paretic dements after the development of the paretic dementia. Rippler and a number of others had previously cited cases. Dr. Kiernan had seen eleven such cases, in which the paretic dement in consequence of the disease had contracted lues which ran its course *pari passu* with the paretic dementia. What is true of paretic dementia is very apt to be true of the cognate condition, locomotor ataxia. Fournier places these two conditions, paretic dementia and locomotor ataxia, among the parasyphiloses.

With regard to the cases cited, Dr. Kiernan recalled cases of paretic dementia in which there were tabetic symptoms, and in which cerebral gummata were found. There were also luetic changes in the spinal cord as well as meningeal gumma. Probably they were cases in which, if the lues coëxisted with the locomotor ataxia, it produced the ordinary pathologic changes of the latter disease, and later the gummata.

With reference to one of the points raised by Dr. Patrick, Dr. Kiernan remembers making autopsies in cases of ataxic mental trouble which had led to ataxics dying in an insane hospital, in which a complete examination of the spinal cord, meninges and brain was made and the findings were absolutely nil. There was nothing truly pathologic found either microscopically or macroscopically. Colloid spheres had been found and artefact of that character produced by alcohol. But these artefacts excluded, no other lesions were present. The question here certainly could not be raised whether the meningeal condition was not the primary one and the other changes secondary.

DR. HAROLD N. MOYER—I am impressed with the progress of this discussion, from the fact that my neurologic friends do not understand all there is to be known about the pathologic anatomy of the nervous system. Indeed, I think it is still in a most chaotic state. We have to unlearn the subject almost as rapidly as it is acquired, and we are getting down, as Dr. Kuh has admirably done in his article, to a thorough, careful study of a few cases, though taking in the whole range of the nervous system; in this way we shall have an accumulation of observations which will perhaps place the pathologic anatomy of nervous diseases on a more substantial basis. When one stops to think of the extent and variety of function and the possibility of change in this extended nervous system, it is no wonder that the pathology of other organs of the body should be far better elucidated. I rise to commend Dr. Kuh's paper, not to discuss it or to differ with him. On a former occasion he drew extended clinical deductions from pathologic observations with which I did not wholly agree, but I concur heartily in what he has said to-night, and I wish simply to commend this masterly observation in neuro-pathologic anatomy.

DR. KUH (closing the discussion)—The discussion has opened up an immense field, but I shall not detain you by dealing with all of the points which have been touched upon. I wish to reply briefly to one or two questions which have been raised. First, as to the Redlich theory of the constriction of the posterior nerve roots. It is a very seductive theory. There is only one fault to find about it. There are any number of cases of locomotor ataxia on record examined during the first stage of the disease in which there is not the slightest trace of any changes in the meninges, and I can show Dr. Patrick some specimens which will corroborate this statement. This being true, it does away with Redlich's theory entirely. Beside, I need but call Dr. Patrick's attention to the fact that a very large number of cases of locomotor ataxia begin with cerebral symptoms; how they can be due to constriction of the posterior roots in the lumbar region is something I fail to see.

Dr. Kiernan's theory, that the syphilis in my case might possibly be the consequence of tabes, is very improbable. We can all understand how a patient suffering from paretic dementia is liable to expose himself to the danger of contracting syphilis on account of loss of control over himself, his tendency to indulge in excesses, from lack of judgment in selecting proper victims, etc., but the same thing does not hold good in locomotor ataxia. I mentioned in my paper that one of the first symptoms was impotence, which is more frequent than satyriasis. Besides, we know positively that in this case syphilis did exist; that the patient had contracted a chancre when 20 years old. I have not claimed that the meningitis in this case was the cause of the locomotor ataxia; in fact, my impression is that the meningitis was of much more recent date than the changes in the posterior columns, and it was not by any means more marked around the posterior half of the spinal cord than the anterior. The only gumma found was in the anterior portion of the cord.

Another point which may be of interest is this: We know that a number of cases of locomotor ataxia are improved very materially by anti-syphilitic treatment. Dinkler's statistics show that improvement took place in 75 per cent. of his cases. If specific meningitis is as common a complication of locomotor ataxia as I am inclined to believe, then we have in its existence the explanation for the effects of anti syphilitic treatment. We all agree that neither mercury nor iodid of potassium can restore the destroyed fibers in the posterior part of the spinal cord; but we can understand how other symptoms might be added and existing symptoms aggravated by meningitis, and that when the latter is improved there results an improvement in the condition of the patient.

SPECIFIC TREATMENT OF NECROSIS OF THE ALVEOLI AND MAXILLÆ WITH AROMATIC SULPHURIC ACID.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY W. A MILLS, D.D.S.

BALTIMORE, MD.

I desire to bring before your attention the non-operative treatment of necrosis of the alveoli and maxillæ with aromatic sulphuric acid. I shall cite only two cases in office practice, entering as little as possible into any minute detail of their history or etiology.

Case 1.—A lady of nervo-bilious temperament, aged 30, called to consult me about a fistulous opening situated at the right side of the superior central incisor which was discharging freely a dark-colored pus. On examination, I found the superior right central and lateral incisors and cuspid teeth dead. Patient informed me they had been so for seven years or more, and had never been treated. I diagnosed the case as necrosis superinduced by chronic abscesses. I prescribed the following:

R Acid sulphuric aromatic . . . . . ℥ ij. 60
Aqua. . . . . f℥ x. 300
Misce.

To be injected by the patient into the fistulous opening five or six times daily.[1] The patient was also instructed to visit the office every other day for examination.

[1] Bicarbonate of soda and water, used as alkalin mouth wash after every injection.

At the expiration of two weeks all discharge had ceased, the soft tissues had fallen into the cavity, made by the chemic action of the aromatic sulphuric acid upon the necrosed tissue. An incision was made extending from the fistulous opening to the right first bicuspid. The cavity was then packed with absorbent cotton saturated with the following:

℞ Acid carbolic
Tinct. iodin. . . . . āā ʒ ss. 2|
Aqua. . . . . fʒ xij. 360|
Misce.

Patient was then dismissed to return the next day, when cotton pledget was removed. The soft tissues having been pushed aside, I was able to see to what extent the bony structures had been diseased. I found the line of necrosis had involved the right facial surface of the superior maxilla from the left central to the right bicuspid teeth and upward from the alveolar ridge to the anterior nasal spine, a part of which with bony structure around the apices of the dead teeth had been destroyed; only sufficient alveolar septum remained to hold them in position.[2] I opened the nerve canals of the dead teeth and cleaned, disinfected and filled them at once. The filling material was forced through the apical foramina, from the posterior surface, and dressed in the usual manner. The patient was then dismissed with instructions to syringe out the cavity twice a day with the carbolic acid and iodin wash, as long as syringe could be used; afterward the medicament was to be used as a mouth wash. In five weeks new bone-tissue had filled the void, when no suspicion of the parts having been diseased remained, the outline being quite perfect, and all the tissues in a normal condition.

Case 2.—Mr. T., a lawyer, aged 40, of sanguino-bilious temperament, presented the following conditions: A fistulous opening situated to the right of the left inferior cuspid tooth, another to the left of the right inferior cuspid; both openings discharging pus copiously. This condition had continued for over a year, and Mr. T. failing to get any relief from many medications, he consulted a surgeon, who diagnosed his case as necrosis, caused, the surgeon said, by the toxic effect of mercury or syphilis. To either being the cause Mr. T. protested most vehemently. Mr. T. was informed that he would have to be operated upon. The first thing the surgeon suggested was to have all the incisor teeth extracted in the hope that nature would have a better chance to throw off the sequestrum. Mr. T. did not object to having the operation performed, but he did object most strenuously against having his teeth extracted, as he possessed a beautiful set, being perfect in form and arrangement. He consulted me to find out if I could in some way manage to save his teeth. I suggested the sulphuric acid treatment, which I thought would not only save his teeth, but save him from having to undergo any operation. After consulting with the surgeon it was agreed that I should take charge of the case, with the understanding that I was to consult with the surgeon as the case progressed, and not, under any circumstances, change treatment without his knowledge. The treatment in this case was the same as in case of number one. After the first day's treatment Mr. T. came to the office early in the morning with a very distressed countenance, and said he believed I had aggravated the case, because the flow of pus had been so great during the night that he could scarcely sleep. I assured him it was a good sign and that the remedy was doing its work well. The first week the teeth became movable and tender to the touch. A vulcanite splint plate was made to hold the teeth in place and to protect them from shock during the process of mastication. At the expiration of two weeks all discharge had ceased. Then an incision was made from the left fistulous opening to the right, the cavity packed with absorbent cotton saturated with the carbolic acid and iodin mixture (as in first case) and left to remain until next day. When pledget of cotton was removed the following conditions were presented: Line of necrosis found to have involved the facial surface of the inferior maxilla, from cuspid to cuspid, slightly exposing the nerves at the apices of two central incisors. The septa were nearly destroyed, the teeth were only held in position by their attachment to the external or posterior plate of the alveolar process and gum tissue. Same instructions for injection and mouth wash were given as in former case. In six weeks Mr. T. was pronounced cured—teeth all living and firm, and the continuity of maxilla outline fully restored.

I not only received the congratulation of the surgeon upon the successful treatment of the case, but the most grateful thanks of Mr. T. I take no credit for the successful treatment of these cases, but will give all honor and praise to Dr. Gross, of Philadelphia, who, I believe, was the first to suggest the sulphuric acid treatment for necrosis. Some one may ask the question: How does the sulphuric acid act? In reply I will say, that the bony structures of the human organism contains 33 per cent. organic matter, 4 per cent. water and 63 per cent. mineral matter, 60 per cent. of which is carbonate of lime. The action of the sulphuric acid is to seize chemically upon the carbonate of lime, break it down or dissolve it, throwing off carbon dioxid gas; and subsequently the animal tissues, etc., break up through a process of fatty degeneration and flow out in form of pus, etc. The acid in the strength prescribed has no effect upon healthy tissues, except to stimulate them. The advantage of this treatment in the oral cavity over that of operative is: The periosteum is in no way injured, thereby not causing a loss of the continuity of outline of any structures, nor the loss of teeth through the necessary extraction in removal of the sequestra.

Miss G., the first case described, told me not many weeks ago she had not fully appreciated what I had done for her until after she had made a visit to Germany, some three years ago. She informed me of a cousin living in Germany who had a similar case with her own, age the same, conditions about the same, but the treatment and final result quite different. In her cousin's case the teeth involved had been extracted by a surgeon prior to the removal, by operation, of the sequestrum. During the operation the periosteum had been injured, causing a loss of a great part of the maxilla; in consequence her face was disfigured for life. Moreover, she had never been able to have the continuity of outline restored by any artificial means. Now, suppose the two cases I have cited had been treated by operation, in like manner, what would have been the consequences?

In conclusion, I would call the attention of the surgeon, no matter how prone he may be to operate in the oral cavity, not to do so before he has failed in the sulphuric acid treatment, or use more conservative surgery than is usually practiced in similar cases.

[2] A similar case is noted by Dr. Black in American System of Dentistry, vol. 1, p. 950.

THE PROGRESS OF MODERN METHODS IN DENTAL PRACTICE.

Read in the Section on Dental and Oral Surgery at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY ALTON HOWARD THOMPSON, D.D.S.

TOPEKA, KANSAS.

The marvelous success of modern dental practice is founded upon two main elements, viz., *mechanical skill* and *medicinal precision*. In regard to the first named element, mechanical skill, the profession has been noted for that for many years. The best practitioners of fifty years ago were famed for artistic taste

and metallurgic technique, for they produced beautiful work, and which in its way has never been surpassed. So far as mere jewelery work is concerned, there has been but little real advance, but there has been tremendous progress made in the extension of the applications of gold plate work to the purposes of prosthetic restoration. We need only refer to the exquisite gold crown and bridge work, so much in use now, to be reminded of the greatly increased usefulness of this wonderful metal. The rapid development of this work has been the most conspicuous feature of advance of the last decade. It has served to render useful teeth that were in former years condemned to the forceps, and has almost banished partial plates with all their discomforts and injuries, so that this invention has indeed been a great blessing to humanity. Being essentially a new idea, the discovery and perfection of crown and bridge work, has been a great advance, for it was the birth of a great principle in practice; and the promulgations of great principles are the milestones which mark the path of human progress. But crown and bridge work has really been the only thing in which there has been great and positive advance in the last ten years in mechanical work and prosthesis. In plate work there has been little or no great improvement, except in a few minor matters as regards materials or methods; it remains much the same as it was ten or even twenty years ago. The same may be said of operating; there has been little advance, for materials and methods have remained the same and there have been no great discoveries. Some materials, as the cements, have been improved and new appliances have been added to our armamentarium, but no revolutionizing inventions have been forthcoming. We might except porcelain fillings and inlays, but this method is yet very crude and needs to be improved greatly before it can rank as a great addition to our resources.

There has been some improvement in porcelain crown work, but nothing worthy of being called a great advance. While undoubtedly capable of great possibilities, there is urgent need of improvement both of materials and methods. Porcelain is a great material for our uses, but it requires simplification of methods of working before it can have the extended application that it deserves. The prosthesis of the future must be dependent on porcelain or some similar material that will admit of better immitation of the color and texture of the natural teeth, than the metals, that we may keep pace with the artistic demands of the age.

As regards the second element of the successful practice of dentistry in our day, we can safely assert that the greatest general advance in the last decade has been made in the field of medicine, as applied to the treatment of diseases of the teeth and their environments. The greatest positive advance has been in the one feature of the extended application of the principle of antisepsis. The increase of the knowledge of germ life, the growth of the science of bacteriology, and their effect upon the theory and treatment of disease is nothing short of marvelous. We live in the age of antiseptics. Antiseptic medicine and surgery has saved thousands of lives that would have been lost under the old methods. Dentistry has shared in the benefits of the new therapeusis to a wonderful degree. The enlarged usefulness of the profession to humanity in the increased saving of teeth, can not be over-estimated. This is especially true of the treatment of septic pulp canals and alveolar abscess. Thousands of teeth are now saved that would have been given up at once in the previous decade. Every practitioner now treats and saves scores of teeth that he would formerly have extracted as hopeless. This is a wonderful gain and is a positive advance on the practice of the past. Pulp canal treatment is now performed with scientific precision, thanks to the antiseptic principle. The many antiseptic remedies that have been brought to our notice and that have been useful in various degrees, attest the interest and importance attached to this branch of therapeutics. The treatment of pyorrhea alveolaris has been greatly improved by the use of these remedies and all the advance that has been made has been due to antiseptic medication. Little improvement has taken place in late years in the surgical treatment of this disease, for the thorough removal of deposits was recommended in former years as now, and we have got little further; but we have made vast improvements in the therapeutical treatment and the application of proper remedies. We may safely say that we are now on the road to the successful treatment of this *bête noir* of dental practice, although we have not yet attained the goal. When we shall have reached the precision with which we now treat septic pulp canals and abscesses, in the treatment of pyorrhea, we will have attained another great step in the forward march of progress in dental practice. But it yet defies us and we can not claim that we have made great gains in the direction of overcoming it in the last decade.

In surgical procedure we have advanced to the conquest of new fields, but all we have gained is due largely to the advantages of antiseptic methods and not to any great improvement in operating. The oral surgeon can now attempt more and accomplish greater things than he could ten years ago, but his methods have improved but little. His great success is due to the extension of the antiseptic principle which has done so much for the treatment of all classes of disease in which septic poisoning is present as an important and dangerous factor. Perhaps implantation should be mentioned as one of our special surgical operations, but little has been added to it, either as to its merits or methods during the last decade. Orthodontia is a special branch of practice that might be classed under surgery, or its kindred branch pediatrics, in which great advance has been made of recent years, thanks to the noted specialists who have devoted skilled attention to it. While there have been no great discoveries in the principles there has been vast improvement in the methods of its treatment in the last decade. Deformities are now corrected and reduced that were formerly considered hopeless, and this by the help of scientific knowledge of procedure and by the philosophic application of intelligently designed and skillfully applied appliances.

It is interesting to note the relationship of science to practice in some of the most marked recent advances. True progress involves the application of exact knowledge to the uses of life. Accidental discoveries which have benefited mankind have been made since the emergence from man's previous animal existence and he became capable of the exercise of his distinguishing human faculty, reason. Such discoveries and inventions, be they ever so useful, have been of no extended benefit until illuminated by scientific knowledge of the principles which lie back of them

and make them possible. With the attainment of this knowledge, discoveries and inventions become clothed with illimitable possibilities. This knowledge has made the great discoveries of the ages the blessings of mankind, printing, steam, electricity, antisepsis; these and more have been made the servants and the saviors of men. Empirical practice is always limited in its application and the good that great discoveries and inventions may accomplish is limited because we are hampered by lack of knowledge of their underlying principles. In the progress of the development of dental practice this is quite apparent. A useful invention or discovery made in an empirical way, is practiced in a limited field for many years with the result of circumscribing its benefits, until some bold investigator, dissatisfied with the mere results without knowing how they are produced, proceeds to experiment and discovers the underlying laws which govern its action. Then it is found that the invention, so useful in one field, could be made of far more general application, and further experimentation leads to the verification of those expectations and its extended usefulness.

It is too true that our art, on which so much of our reputation and usefulness depends, has outstripped our science and this art is largely the result of empirical practice. Take the one item of crown and bridge work, which, while protested against by many as unscientific and pernicious, and it is so in regard to its worst features, yet holds its own and grows because it is practicable and useful. It is unscientific in theory but useful in practice and has sprung from pure empiricism. On the other hand, the other great item of our recent progress, antiseptic medication, has proceeded from pure science, the reasoning from cause to effect, the producing of results from the prediction of discoveries. That is pure science, the producing of practical results from a basis of scientific fact. The mechanical treatment of caries long preceded our knowledge of the real nature of the disease, and the cure attained was the result of pure empiricism and experimentation. The treatment was scientific but it remained for later discoveries to reveal the scientific basis. So with many of our most noted achievements in the conservation of the teeth or their prosthetic restoration; we attained a certain success that was practical and useful but the scientific basis long remained unknown, It was the main characteristic of the old practice that results were reached by the slow process of experimentation, trying first one thing and then another, until something was stumbled upon that answered a practical purpose in a greater or less degree.

The new practice is more scientific. In all its main features it proceeds from a scientific basis. It does not experiment in a blind way but reasons from cause to effect and applies the remedies or appliances that a discriminating judgment suggests as the proper agent for securing a desired result. That is science. The empiric would try what was at hand without regard to its qualities or what he desired to accomplish, and failing in one try another. The success of modern practice depends more on scientific judgment than that of the past, for all of the ordinary possibilities are exhausted. We have gained all the victories within easy reach and to attain more conquests and extend our field of usefulness, we must search deeper and define closer to be enabled to wrest yet other secrets from nature. But that is the motive and the mission of modern dentistry. We must do yet greater and better things, but to do them we must carry our investigations into untried fields and far deeper into the old ones that we may bring more things to light that will help us to grow scientifically and practically and thereby increase our capacity for service to humanity.

CURE OF PROSTATIC HYPERTROPHY BY INTERNAL PRESSURE.

BY EVAN O'NEILL KANE, M.D.

KANE, PA.

Some years ago I wrote an article for the *Medical Times* of Philadelphia, in which I set forth the superior advantages of internal pressure absorption, as a treatment for senile hypertrophy of the prostate gland with its attendant evils, over the usual forms of palliative and operative procedure. I then gave the credit of this mode of cure, as I do now, to the originator of the operation, the late Dr. S. D. Freeman. The details of the procedure being, perhaps, not sufficiently entered into, my article was received without comment, and, so far as I am aware, it has not led any one to perform the operation. The radical and, it would seem to me, the over-heroic course advocated by Dr. White of the Pennsylvania University, in removing the testicles in order to bring about an atrophy of the gland, if it be a satisfactory cure, entails too great a sacrifice upon those subjected to the ordeal to ever become a popular method of treatment. While the attention of the profession is being attracted to this subject through Dr. White's experiment, I have thought it a fitting time to again point out the merits and method of my pressure treatment. Senile hypertrophy of the prostate gland is not a disease worthy of the surgeon's consideration until its enlargement markedly interferes with the free evacuation of the bladder, as shown by the various disorders, painful, frequent and difficult micturition and the like, incident upon a partial retention of urine. The increased development of the muscular elements in the prostatic organ or muscle becomes harmful only in degree with its encroachment upon the caliber of the urethra by distorting or constricting it. If, therefore, the channel of exit from the bladder can be restored to its normal course and caliber nothing further in the way of treatment is necessary.

The technique of internal pressure treatment is simple, and depends for its successful conduct on a thorough knowledge of the anatomic relations of the parts involved, together with a fair degree of skill in the management of the solid sound and ailver catheter. Having determined, by means of a flexible instrument that no stricture exists as a primary trouble, or if there be one, having overcome it, the gland is carefully examined per rectum, in order to ascertain its altered relation to the urethral canal and the precise course of the deviations which have been produced. By means of the index and middle finger of the right hand introduced into the rectum the prostatic gland is steadied and manipulated. A large silver catheter, No. 26 or 28 with an S curve, is introduced along the urethra by means of the left hand, until it reaches the point of resistance. At the same time the fingers in the rectum guide the tip of the instrument through the tortuosities of the prostatic urethra. This manipulation is rendered far less difficult of execution if the beak of the instrument is blunt, as large

as the stem and well polished. Its caliber being large it will be enabled to press the urethra into place ahead of it with far greater ease than if it were small and pointed. It will thus fill the canal snugly. Otherwise the mucous membrane, thrown into loose folds before the advancing instrument will tend to catch upon its point and tear, allowing the urethra to become perforated, a false passage resulting. The structure of the organ being mainly muscular, and its enlargement of a fibro-muscular character it is somewhat resistant. Further, being more or less congested and edematous the impinging portions of the gland are readily displaced laterally by the tip of the instrument, provided a moderate amount of pressure, and a sufficient degree of time are allowed to the maneuver. With patience and gentleness, being careful not to exert undue force, the operator is not likely to be disappointed in reaching the bladder in safety and without injury to the urethra. This step in the operation is the only difficult one, and I repeat, should occupy considerable time, especially if the enlarged gland is dense and hard. The catheter is passed until it rests well within the bladder. Here it is retained by guys fastened from eyelets in its open extremity, extending to a band in the usual manner for retaining urethral instruments in place. A cork is inserted in the open end of the catheter to prevent dribbling of urine, and after the effect of the anesthetic has passed off, the necessary amount of opium is administered to insure quiet. The patient is kept lying upon his back with the knees and shoulders elevated by pillows to a sufficient height to keep the abdominal muscles relaxed. Every four hours he should be turned upon his side, the cork withdrawn from the catheter and the contents of the bladder allowed to discharge. I advise, if the urine is foul and ammoniacal, as it generally is in these cases, that the viscus be washed out daily with warm boracic solution until the odor and cloudiness disappear. The opiate may generally be discontinued by the end of the first twenty-four hours, but should signs of increased irritability of the bladder, or much pain ensue, it must again be resorted to.

The silver catheter should not be disturbed for three days, or at least until it is found that it no longer appears to hug closely the walls of the prostatic urethra. If it is found to glide freely in and out when the guys are loosened it may he withdrawn for an hour with safety. It should then be cleansed, polished and replaced. If not withdrawn too early, or allowed to remain out more than an hour, no difficulty will be encounted in its re-introduction. Each day after the first withdrawal of the instrument, it can be allowed to remain out for a longer period of time, although I advise its retention all night and a portion of each forenoon up to the seventh day, after which time it may be removed entirely. I sometimes find it advisable on account of the resiliency of the prostatic tissue, not to remove the instrument at all, for the entire week. No further surgical treatment is necessary after the final removal of the catheter; all that is required being the administration of ordinary absorbent remedies, such as muriate of ammonia or iodid of potassium for a month or two.

On examination per rectum, it will be found that, while the gland has not yet become appreciably reduced in size, the portions of it which had formerly impinged upon the urethra and diverted it from its proper course have, by the pressure brought to bear upon them by the instrument, been absorbed away, the urethra appearing to occupy its normal situation. The pressure exerted by the instrument is not only immediately beneficial in its action, by restoring the normal caliber and direct course of the urethra. By its presence within the gland, it appears to set up an alterative, or more properly speaking absorptive action, which, after its withdrawal, is continued until the gland finally assumes its ordinary dimensions.

Pressure treatment of the prostate gland will commend itself to every conservative operator as much superior both to the more brilliant and more dangerous operative methods, and to the various palliative measures which simply have the merit of prolonging life without removing many of the attendant miseries; and there is practically no shock connected with the procedure, not a small consideration in an operation performed only upon middle-aged or elderly subjects. There being no cutting or laceration, there is no danger from the absorption of urine or other septic matter. The benefits resulting from the work done are realized immediately, even before the completion of the cure, and there is less difficulty in persuading nervous elderly patients to submit to a treatment wherein there is no cutting.

I would suggest that were the urethra so tortuous, the gland so enlarged, and its structure so dense as to baffle all attempts to discover per rectum the precise position occupied by the urethra, a modification of the operation might be permissible. This modification, though it would necessitate the use of the knife, would still be safe from the usual dangers incident upon opening the urethra or bladder and the dangers incurred through infiltration of urine. The gland might be cut down upon as in operating for stone, the incision in this case not extending actually into the urethra, but simply sufficiently near to it for the operator to ascertain the position of the tip of his instrument and its relations to the urethra through the wound. This would permit him to guide the tip along the canal to its destination within the bladder with ease. The wound could then be sutured and expected to unite without drainage by first intention, since we would have no urine to irritate and keep it open. The exploratory opening needs only to be large enough to admit the index finger, and deep enough to permit the recognition of the urethra within the substance of the gland.

PERITONEAL SUPPORTS—(LIGAMENTUM PERITONEI.)

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(Continued from page 497, Vol. xxv.)

The mesosigmoid is a double right and left-bladed membrane consisting of two serous, polygon-shaped, epithelial-celled layers one on each side, while the middle layer, the essential one, is the membrana mesenterii propria, the real neuro-vascular visceral pedicle. In the membrana mesenterii propria are arranged in definite order the nerves, lymphatics, the arcs and arcades of vessels and the elastic and fibrous tissue bundles which surround and retain in fixed relations the essential structures which maintain the existence of the S–romanum. The nerves which supply the mesosigmoid chiefly arise: 1, from the abdominal brain; 2, from the ganglion at the bifurcation of the aorta, close to the origin of the inferior mesenteric artery; and 3, from nerves arising out of the

lumbar plexus. The inferior mesenteric artery conveys the blood to the mesosigmoidea. The shape of the mesosigmoidea in the adult is very various. It is an unequally S-shaped loop in the human body, in general, and yet there may be in many subjects little in the figure to call one's attention to it. One loop of the S may be very small, or not existing, and the whole of the loop existing in the other loop. Also the S-shaped figure must lie flexible or bent to suit the shape of the dorsal wall. The peculiar shape of the S-iliac is due to three factors; (*a*), its fixation to the under border of the psoas; (*b*), to the fixation at the third sacral vertebra (*c*), to Gruber's fold *i.e.*, to the behavior of the mesocolon as it enters into the neck of the rotating intestinal loop. Gruber's fold is the ligamentum mesenterico-mesocolicum. I designate this duplicature of peritoneum as Gruber's fold, because so far as I am aware, Gruber was the first to describe it. It controls to some extent the mesosigmoid and sustains it from prolapse especially keeping it out of the pelvis. The sigmoid is at first rectilinear. It is situated directly along the mid-dorsal line. It gradually becomes an elongated gentle curve. Finally, it assumes convolutions and lies against the dorsal or pelvic wall. The loop may be in the pelvis, in the right iliac fossa, among the small intestines or rarely on the left iliac fossa. From the tenth week of fetal life its convexity continues to the internal border of the left kidney.

In the evolution of the sigmoid the most notable factor is the left kidney. In the tenth fetal week it is plain to note that the mesosigmoid reaches to the internal border of the left kidney. As the bodily growth progresses the mesosigmoid advances to the interior face of the left kidney and, finally, to the outer border of the kidney as found in adults. The adult position of the ascending colon may be assumed by the eighth to the twelfth week of fetal life, *i.e.*, the descending colon assumes a vertical and may be a sinuous course. It may be noted that old views considered that the sigmoid bowel began at the iliac crest, but modern anatomy starts the sigmoid and ends the descending colon at the external border of the psoas muscle. The upper point of the mesosigmoid often reaches the radix mesenterii and not infrequently the point where the duodenum turns into the jejunum. The whole mesosigmoid may be distorted by inflammations on the lower or left blade, as it lies on the psoas muscle or by old cicatrices on its upper blade especially in Gruber's fold. On account of the variation of the situation and course of the sigmoid and mesosigmoid, it has induced many ingenious views from well-known anatomists. The unequal S-shape to the sigmoid is chiefly due to the length of the ligamentum Gruberii. At the end of the third month the mesosigmoid is generally a lightly curved line reaching from the under pole of the left kidney to the middle of the third sacral vertebra. However, not infrequently the mesosigmoid is quite concave to the left, or the upper point of the mesosigmoid, as it begins to leave the mid-dorsal line, may be pointed to accomodate the intersigmoid fossa formed by the spermatic vessels. In general, at the fourth month the mesosigmoid reaches the fourth lumbar vertebra and then is carried to the left by the lower end of the growing left kidney. If the mesosigmoid be elevated by Gruber's fold during the rotation of the intestinal loop, it will not allow the mesosigmoid to leave the mid-dorsal line so far down. For Gruber's fold may be so contracted by the cecum dragging it upward, as it travels across the abdomen to the under surface, that the upper point of the mesosigmoid may reach as high as the flexura duodeno-jejunalis. Now, since Gruber's fold is attached to the sigmoid at different points, it will induce different sizes to the portions of the S. I have observed that Gruber's fold is frequently attached just below the middle, thus leaving the upper portion of the S the larger. If we look at the upper loop of the S, it will be noted that the sexual gland and the kidney are responsible for it. If we observe the lower loop in its fetal development it may be seen that the sexual gland, later, changes from the lower end of the upper loop and begins to develop that. As time progresses from the fourth month the loops simply grow on slowly. From the sixth fetal month the loops are distinctly pronounced. The sexual gland descends and with the kidney grows rapidly as do the two loops of the S. Meconium now rapidly

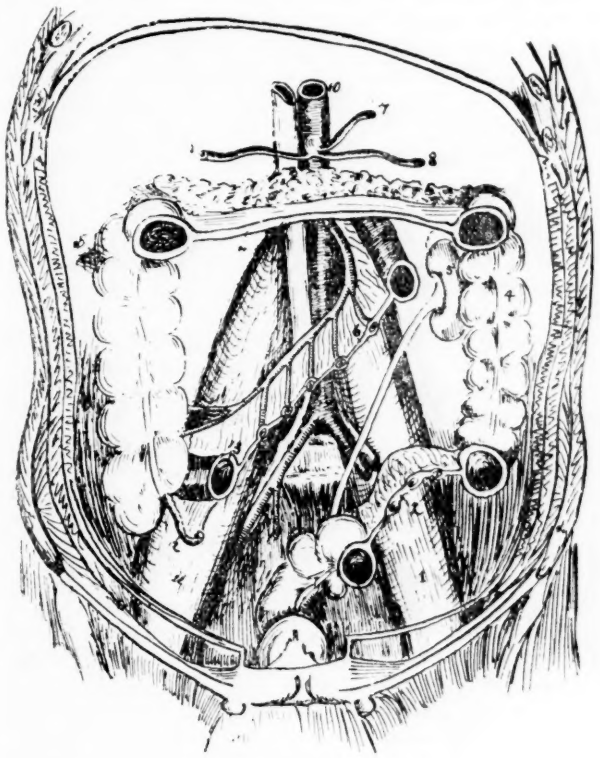

Fig. 50 represents the line of the mesosigmoid as it crosses the psoas muscle. I sketched this diagram to show how prominent and what an important rôle the psoas plays in relation to the peritoneum and especially in regard to the mesosigmoid. 1, psoas muscle; 2, cut edges of mesosigmoid; 4, descending colon; 5, kidney; 6, cut edge of mesentery; 13, ilium; 12, appendix; 11, right psoas; 9, hepatic; 8, splenic, and 7, gastric arteries; 10, aorta; 14, cut edge of mesocolon-transversum; 15, hepatic flexure. The peritoneum in the region of the pelvis is important to every practicing physician especially in the female. Several years ago I made considerable investigations in regard to the condition of the peritoneum of the male and female and found that in some animals and man the femoral pelvic peritoneum is the thicker and stronger; probably from ages of experiences of peritoneal trauma and repeated infectious invasions. In the region of the pelvis I shall illustrate the peritoneal supports by various cuts, of my own design and also by those of others. The diagrams are drawn not always exact to nature's lines, but nevertheless they approximate some of its truths.

accumulates and irritates the mucous membrane, inducing blood flow and more active growth and elongation of the loop. The loop may grow very rapidly and so elongate that it must seek room in the right iliac fossa or among the small intestines. In one new-born subject Dr. Waite and I found the very long sigmoid rested in the form of a volvulus with the twist situated at the left pelvic brim at the junction of the sacrum and iliac bones. There is a por-

tion of the decending colon extending from the iliac crest to the external border of the psoas muscle which is frequently more fixed than other portions of the vertical colon, but we must consider that it does not belong to the S-iliac. The unnumbered and indefinite classification given to the situation, and periods of development of the sigmoid are of little use, as the situation varies indefinitely, with an organ possessing a long pedicle and no special times of growth. Yet, as to growth, one can note no very especial change in the first two months, but a very decided change in the third and fourth month. One could well say that in the first two months of fetal life, the mesosigmoid is in a primitive condition. It turns neither to left or to right but holds its ancient course in the mid-dorsal line, until the end of the second month or thereabouts. The mesosigmoid is really the old, original primitive mesentery of the digestive tube.

The primitive period may be succeeded by the period of transition from the child-condition to that of the adult. In this period from the beginning of the third month the portion of gut extending from the lower pole of the left kidney to the third sacral vertebra forms two varying loops, an upper and a lower. The two loops are divided by Gruber's fold of peritoneum at first, but subsequently the whole sigmoid may be represented by one large loop. In general the upper loop (*i.e.*, between the external border of the psoas and the fold of Gruber) is at first the larger, but later the lower loop may become the larger loop as the fecal matter accumulates and exercises its irritative and mechanical power, The sigmoid may show a loop in the right iliac fossa, a loop away up among the intestines, a loop in the pelvis and a double loop which lies partly in the right iliac fossa and other localities. Occasionally one can find the double or single loops entirely in the pelvis. During all the stages of transition the line of the root or that of the insertion of the mesosigmoid is generally straightening out, *i.e.*, the radix mesosigmoidea is becoming a shorter line as growth proceeds. The acute angle between the lower mesentery situated in the mid-dorsal line and the mesentery extending from the lower pole of the left kidney to it is increasing and fast becoming a curved line. In short, the root of the mesosigmoid is gradually descending to the adult situation.

A third period of the mesosigmoid may be called the adult period when the mesosigmoid is fixed. It begins at the external border of the psoas muscle and ends in the pelvis at the third sacral vertebra where the rectum loses its posterior serous covering. The loop lies partly extra- and partly intrapelvic. In the adult it hardly ever lies in the right iliac fossa but chiefly in front of the lumbar and sacral vertebra. In the newborn the sigmoid lies chiefly outside of the pelvis from physical reasons. There is but little room in a child's pelvis for any organs except rectum, bladder and uterus. To resume; at first, there is a double loop in the sigmoid, a little later one loop remains in the iliac fossa, the other ascends in the abdominal cavity and the two loops finally coalesce into one large one as it is generally. The great rôle in forming the two parts of the S-loop is done by Gruber's fold. At first it forms the large part of the loop above and the smaller below, but changes and bowel contents gradually make the lower loop of the large, and, finally, the two parts of the S-loop appear as one inseparable sling. The accumulation of meconium through its irritative and mechanical power is responsible for the large loop and changes from its primitive condition. The situation of the sigmoid at birth may be described as follows: The gut passes from the iliac crest to the psoas muscle, the loop then crosses the pelvis at a level with its brim. It then reaches more or less in the right iliac fossa (20 per cent.), but most frequently simply comes in contact with the right psoas muscle. It than extends, according to its length, more or less up among the intestines. The whole S. loop, however, may be in the pelvis in man or woman. The French contend that to do a colotomy on the newborn incision should be made in the right iliac fossa, but this proposition will not generally hold true according to my examinations. According to Boucart, who examined 150 infants and found the sigmoid loop in the iliac fossa thirty-three times (22 per cent.) There is little utility in describing a descending, transverse, and ascending loop in the sigmoid. The disagreement of authors in regard to the situation of the sigmoid is due to its changing position from emptying and filling with feces and gas, from the peristalsis and the changes and situation of other viscera, especially those of the pelvis and its long mesentery. The conditions which determine what organs lie in the pelvis are: (*a*), the size of the uterus; (*b*), the size of the bladder; (*c*), the size of the rectum; (*d*), the size and situation of the cecum; (*e*), the size and situation of the sigmoid; (*f*), the amount of small intestines in the pelvis.

I can see no advantage in the name iliac, or pelvic colons, as neither may correspond to its indicated name or situation. The long mesosigmoid, with its neuro-vascular pedicle, indicates that it has a wide range of motion and that the situation of the loop will be normal wherever the mesentery allows it to range (except where it becomes fixed). Any mobile organ is dislocated when it is permanently fixed. The sigmoid is dislocated when fixed by adhesions or disturbed by a volvulus. In fifty autopsies I found 75 per cent. of adhesions in the mesosigmoid, and volvulus occurs in the sigmoid in 60 per cent., of such cases.

From years of investigations in the abdominal viscera, I would claim that one can only generalize two positions for the sigmoid flexure. The first and most frequent is when the sigmoid flexure lies suspended by Gruber's fold in the pelvis. The second is where the sigmoid flexure lies above the pelvis against the dorsal wall, chiefly to the front of the lumbar vertebræ and to their left. Most other positions of the sigmoid are uncertain, temporary and variable.

(*To be continued.*)

INTERESTING CASES OF PERINEAL SECTION, WITH REMARKS.

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(*Continued from page 477.*)

Case 33: Impermeable Deep Stricture.—A man, 38 years of age, was referred to me by Dr. M. W. Thompson, of Chicago. Had a history of successive attacks of gonorrhea extending over a period of years. Symptoms of urinary obstruction had existed for some four or five years, and had increased until the stricture had become surgically impermeable. I performed perineal section without a guide, found the urethra extremely hard and nodular from the perineo-scrotal junction well down

into the membranous portion. The stricture practically involved the entire extent of the latter. Considering the rather complicated state of affairs the bladder was reached with considerable rapidity, the operation requiring about eight minutes after the opening of the urethra. A small fibrous tumor was found in the right lateral wall of the urethra in the midst of the stricture tissue. This was about the size of a fat pea and was so hard and cartilaginous in consistency that I at first mistook it for a calculus lodged in the urethra at the distal side of the stricture. Several penile strictures required division, one in the scrotal portion of the urethra being especially marked. The urethra was restored to a caliber of 40 French throughout. The drainage tube was removed three days after the operation, and within a short time retention with overflow occurred. For a few hours I overlooked the true condition, inasmuch as the dribling of urine through the perineal wound was what might have been expected, and indeed what frequently occurs, in cases in which the deep urethra has been widely cut and dilated. Systematic evacuation and the irrigation of the bladder resulted in a complete subsidence of this particular symptom within a week, and the subsequent progress of the case was uneventful. At the present time, two months after operation, the patient takes the 37 French without the slightest difficulty and expresses himself as being in much better health than he has been for many years.

Case 34: Multiple Tortuous Stricture.—Man, about 35 years of age; occupation brakeman. There was in this case a history of repeated gonorrheas, and of possible perineal injury about the age of puberty. The right testis had evidently been the seat of traumatic inflammation and was diffusely enlarged to a moderate extent and quite hard. This condition, he said, was the result of an injury which, as near as he could recollect, also involved the perineum. He had not had, however, any urinary symptoms until within the last year. About a year before consulting me he had noticed that the stream of urine was growing gradually smaller, and that it took some time to empty his bladder. He was otherwise in perfect health. Examination revealed a tortuous stricture extending from the fossa navicularis to the peno-scrotal angle. This admitted a No. 10 French. At the bulbo-membranous junction, an obstruction was encountered through which I at first found it impossible to pass a filiform bougie. Complete retention did not occur. The patient succeeded with considerable effort and expenditure of some time in emptying the bladder sufficiently to afford relief at least. At the end of about a week I succeeded in passing a filiform bougie, and within a few days I succeeded in dilating the deep stricture to a caliber of No. 7 French. The stricture, however, now proved absolutely resistant to treatment, and no further attempts at dilation developed urethral chill. Inasmuch as this condition of affairs was associated with penile strictures, which would probably demand a radical operation, I deemed it wise to perform perineal section. The operation in this case was free from difficulty, but the subsequent course of the case was a little annoying. There was no fever or other untoward symptom following the operation, but the perineal wound healed only in part, the anterior angle remained open and affording an excellent prospect for a permanet fistula. At the end of six weeks I found I could pass a No. 36 French into the bladder without any difficulty, but the fistula showed no signs of repair. I cauterized the small opening with tincture of iodin applied in liberal quantities, a sound meanwhile being left in the urethra. I now passed a single strand of silkworm gut and anchored it with shot. No catheter was introduced into the bladder, the patient being allowed to pass his urine as though no fistula existed. To my gratification the fistula was soundly healed at the end of a week, and not one drop of leakage accurred after the shot suture was introduced.

Case 35: Supra-Pubic Fistula; Multiple Perineal and Penile Strictures of gonorrheal origin; Use of the Retrograde Guide.—Young man, 25 years of age; occupation bookkeeper; history of successive attacks of gonorrhea, first attack having been experienced at the early age of 14. This patient was always very delicate, and his urinary trouble had been very poorly tolerated. Urinary obstruction was first noted four years before I first saw the case. The patient was dissipated and suffered from severe attacks of retention, which were evidently due to congestion and spasm superinduced by excesses. The last attack of severe retention had come on the year before I saw the case. The practitioner who was called in, failing to introduce an instrument per urethram, decided within twenty-four hours to pass a trocar supra-pubically. This was accordingly done with a small retrograde catheter introduced through the trocar. A permanent fistula remained. Numerous attempts were afterward made to enter the bladder with bougies, but without success. At the time the patient consulted me he was under the impression that the urethra had, as he expressed it, entirely grown together; but that he was so greatly annoyed by the supra-pubic fistula that he was anxious to undergo almost any operation to secure relief. The operation in this case was simplified greatly by the fact that a supra-pubic opening already existed. This was enlarged sufficiently to introduce the finger for the purpose of guiding a flexible bougie of good size into the posterior urethra. The penile urethra was so tightly strictured that it was with great difficulty that a filiform could be introduced down to the perineal portion of the canal. Careful dissection in the perineum enabled me to open the urethra just anterior to the bowel, at which point the canal was not greatly narrowed. The subsequent steps of the operation were very easy, there being no difficulty in finding the posterior portion of the urethra with the assistance of a retrograde guide. I made the attempt to close the supra-pubic fistula by suturing the bladder, when a small opening remained with moderate leakage for about three months, at the end of which time the supra-pubic wound was soundly healed. The penile strictures were cut to a caliber of No. 32 French, a sound of this size being readily passed into the bladder. The patient was last heard from two years after the operation, at which time he was passing No. 30 French without difficulty, and was apparently perfectly well, his general health having markedly improved.

Case 36: Deep Perineal Stricture of Gonorrheal Origin, Complicated by Hypospadias.—Man, 30 years of age; occupation, traveling salesman; singular type of gonorrhea acquired at the age of 25. This had continued with occasional exacerbations, with periods of improvement due to reinfection or otherwise. Urinary obstruction had developed two years previously. Attempts at treatment by dilatation had apparently been harmful. There had been no attacks of retention, but the obstruction to micturition had progressively increased until the patient found it almost impossible to evacuate the bladder and there was, the greater portion of the time, constant dribbling of urine. Examination in this case revealed a complicated condition which proved very annoying; there was a moderate degree of hypospadias, the meatus opening about one-fourth of an inch posterior to the glands. This opening was very narrow and would not admit a sound larger than a No. 8 French. After several sittings I succeeded in passing a filiform into the bladder, but the urethritis increased to such an extent that I hardly felt justified in depending upon the repeated reintroduction of instruments. Complete closure of the stricture from the reactionary inflammation seemed probable. I therefore suggested a perineal section, which was consented to. The pseudo-meatus was enlarged transversely, the penile urethra being found to be free from obstruction. The perineal portion of the canal was quite extensively strictured, the obstruction extending as far forward as the perineo-scrotal angle. The stricture in this case was not well developed, consequently I did not consider it wise to incise as freely as I would otherwise have done. The urethra was therefore enlarged to a caliber of only 30 French; a sound was passed on the fifth day after the operation without difficulty. Instruments were reintroduced at intervals of three or four days for about three weeks, at which time it was found that they could be passed with great difficulty. A week later it was found impossible to pass a sound larger than No. 20 French. I therefore suggested reopening the perineal wound, with division of any contracting bands which might be discovered. I found, on reoperating, that the incision made in my first operation was not sufficiently free, a bridge of cicatricial tissue having reformed on the roof of the canal at about the middle portion of the urethra. This was freely divided, the remainder of the canal apparently not requiring attention. The favorable course of the case after the second operation was uninterrupted.

Recontraction had not occurred at the end of six months after the dismissal of the case.

Case 37: Multiple Penile and Perineal Strictures of Gonorrheal Origin; Perineal Fistula from Previous Operation.—Man, 40 years of age; occupation, hardware merchant. This patient had a history of numerous attacks of gonorrhea, the first of which had been experienced at the age of 20. At the age of 35 stricture developed with a progressive obstruction to micturition. Complete retention finally occurred, and two years before I saw the case he had been operated on during an attack of retention. The operation was evidently not thorough, the operator contenting himself with the relief of the retention. Several penile strictures were not interfered with. After the operation sounds of small size were passed for a time, and it was finally found to be impossible to introduce anything larger than filiforms down to the site of the operation. The

fistula remained open. I succeeded in passing a filiform from before backward, bringing it out at the perineal opening. Upon this filiform I tied a strong silk ligature entirely through the urethra and out of the perineal wound. I now tied a No. 4 bougie upon the end of the ligature emerging from the meatus, and drew it down through the perineum. Using this as a guide I divided the perineum thoroughly, found the urethra was free posterior to the fistula, but that it was tightly contracted at the peno-scrotal angle. I divided the stricture upon the roof of the canal by means of a blunt-pointed bistoury, and had no difficulty in introducing a urethratome and dividing the penile strictures. The urethra in this case was very large, and after the operation I had no difficulty in introducing a No. 40 French into the bladder. The case progressed nicely with the exception of the perineal wound at the site of the old fistula, which was very stubborn in healing. Finally, however, by repeated use of the shotted sutures and applications of iodin I succeeded in closing the opening. This case has not been heard from since three months after the operation, at which time a No. 30 French could be passed with great ease.

Case 38: Intractable Traumatic and Multiple Inflammatory Strictures.—Young man, 25 years of age, referred to me by Dr. Gfroerer, of this city, for the relief of a very tight stricture at the perineo-scrotal angle. Exploration showed several strictures of varying caliber in the penile urethra. The young man gave a history of severe traumatism, sustained some years before, and of several subsequent attacks of gonorrhea. Considerable damage was done to the urethra by the original perineal injury; retention of urine occurred at that time, for the relief of which an attempt was made to pass a catheter with the result that the floor of the urethra was completely perforated and the catheter pushed entirely through the crushed perineal tissues. Perineal abscess and fistula followed. Numerous attempts at a cure of the resulting stricture had been made, including the use of the permanent catheter for weeks at a time and several internal cutting operations. As the gentleman who referred the case to me had not performed any of the operations mentioned, I was unable to obtain accurate data. I proposed perineal section, and the operation was accordingly performed. It was with extreme difficulty that I succeeded in getting a guide through the stricture even under anesthesia. I finally succeeded in introducing a small filiform. The operation showed a dense cicatrix involving the urethra at the perineo-scrotal angle. The perineal fistula, which was still present, showed a line of dense cicatricial tissue running along the urethral wall, the stricture and the indurated fistulous track being intimately blended together. The urethral tissue, which was present at the point of stricture, was so slight in extent that grave doubts existed in my mind as to the ultimate success of the operation. The perineal urethra was restored to a caliber of 38 French. Although the penis in this case was extremely small and apparently undeveloped, no trouble was experienced in enlarging the entire extent of the urethra to the caliber mentioned. The patient did fairly well after the operation, a full-sized sound being passed in the usual manner. Four weeks after convalescence was thoroughly established, recontraction of the stricture began and progressed with extreme rapidity. The patient being willing to undergo a second operation, perineal section was again performed. The penile urethra was found still free from contractions and the perineal stricture had recontracted only at one point, involving the narrow extent of the urethra at the site of the original injury. At this operation I divided the urethra completely through upon the roof and had no difficulty without any further cutting of the penile urethra in introducing a 40 French into the bladder. Two days later I grafted a piece of integument from the outer surface of the patient's thigh upon the roof of the urethra at the site of the stricture, with the result that a small portion of the transplanted integument adhered. The operation was performed early in January. It is now two months since the second operation, and although sounds have been regularly introduced at intervals of from four to seven days, recontraction is beginning again. Recontraction, however, seems to be entirely upon the floor of the canal, the point at which the graft was made seemingly being still perfectly smooth and supple. It is impossible to say at the present time to what extent recontraction will occur. A 33 French can be introduced at the present time, and if recontraction does not progress to an extent sufficient to seriously obstruct the passage of urine, and if it should be possible to maintain a moderate degree of patency of the canal, I shall consider that the operation is a brilliant success. In case further operation becomes necessary, resection of the involved area of the urethra is to be taken into consideration. But I am free to say that I believe that that particular method of operating will in this case be rather difficult, and it is possible that it may yet become necessary to establish a permanent artificial urethra in the perineum.

Case 39: Impermeable Perineal Stricture with Multiple Fistulæ; Suprapubic Cystotomy and Retrograde Catheterization.—Man, 40 years of age; occupation clerk. This man stated that he could hardly remember a time since he was 16 years of age that he did not have a gonorrhea of greater or less severity. His first urinary trouble began at the age of 30, at which time he was said to have a stricture. He was treated by sounds at intervals for several years. About five years after symptoms of stricture first developed he had an attack of retention which was relieved by catheterization. Instrumentation at this time was apparently rough and resulted in the development of perineal abscess. This was opened and found to communicate with the urethra. A succession of abscesses formed, with the formation of numerous sinuses and fistulæ, several of which burrowed well out upon the buttocks. One sinus had evidently burrowed backward, involving the ischio-rectal fossa, at which point an abscess had formed with a resulting urinary fistula. The patient was in a fair condition generally, and there was no immediate danger of retention. He was carefully prepared for an operation for one week, at the end of which time perineal section was performed. After prolonged search for the urethra and perineum, a search which was attended with considerable hemorrhage, I decided to open the bladder above the pubes. The passage of a retrograde guide enabled me to find the proximal portion of the urethra with great facility. The sinuses and fistula were laid freely open with the urethra freely divided on its roof. The urethra was restored to a caliber of No. 35 French, with division of several strictures of greater or less caliber in the penile urethra completing the operation. Through and through drainage was instituted in this case, and a considerable degree of cystitis existed, so that I had little hope of obtaining primary union of the suprapubic and vesical wound. At the end of one week the drainage was made entirely perineal. At the end of four weeks both the stricture and perineal wounds were soundly healed, several sinuses and fistulæ, which had been laid open, not being entirely cicatrized. I had the opportunity of examining this patient three years later, at which time he was perfectly well and could pass a No. 30 French with no particular difficulty.

Case 40: Deep Stricture of Gonorrheal Origin; Reoperation.—Man, 45 years of age, engineer. This patient had suffered from numerous attacks of gonorrhea and had developed stricture about the age of 35. He had had numerous attacks of retention, which at first were relieved by catheterization. The stricture finally, however, became impermeable, when perineal section was performed. A fistula followed the operation, which lasted eight months and finally closed. In spite of the advice of his surgeon, the patient had neglected instrumentation, when an attack of retention came on which was relieved with great difficulty. Patient finally consulted me, and I found multiple tight penile strictures, in addition to an old perineal stricture which had closed so tightly that I could not introduce a filiform. The penile strictures may or may not have existed at the time of the previous operation, but the patient could give me no information on this point. He was anxious to have something radical done for the relief of his condition. I performed perineal section without a guide. The urethra in this case was restored to a caliber of No. 36 French, the penile strictures being freely divided. There was a chill followed by slight rise of temperature on the third day after the operation, temperature remaining slightly elevated for nearly a week, at the end of which time it became normal. The perineal wound was closed at the end of two weeks; the patient was allowed to get up and about a few days later. I have not heard from this patient since the operation. I have provided him with the necessary sounds, and he was thoroughly appreciative of the necessity of their occasional introduction. I have little doubt that the ultimate result was good.

Case 41: Recent Deep Traumatic Stricture.—Man, 27 years of age, electrician by occupation; referred to me by Drs. P. M. Woodworth and C. A. David. Three months before consulting me this patient fell astride of a joist while working in a building. He suffered severe contusions in the perineum and buttocks, and was confined to his bed for three weeks. For the first week or ten days catheterization was necessary, after which time the urethra was left to take care of itself, with the result that within two months it had almost entirely closed. Micturition was frequent, with straining, and the urine extruded *guttatim* with great difficulty. The patient was otherwise in excellent condition and denied venereal history. I found it impossible in this case to introduce even a filiform guide, the urethra having been so extensively lacerated and encroached upon by cicatricial deposits. Perineal urethrotomy

was performed, and the urethra enlarged to a caliber of No. 40 French. Incision of the meatus being necessary, I introduced an instrument of its size. The penile urethra was found perfectly clear; the perineal wound was consolidated at the end of two weeks, and at the end of six weeks the patient was dismissed. When last seen, three months after the operation, he was passing sounds from 32 to 35 French with great facility. He had regained his health. Recent advices from this patient show that he is still in excellent condition.

Case 42: Deep Stricture with Multiple False Passages.—Man, 38 years of age, hardware merchant by occupation. This man had been a patient of mine before: I operated on him some five years previously for empyema of the gall bladder and cholelithiasis. He had at that time symptoms of stricture and I advised him to give the matter some attention, but the condition for which I operated was so predominant in his mind that he considered the urethral trouble a minor matter. The first intimation of urinary obstruction occurred about the age of 30, he having had several attacks of gonorrhea. The recent acute attack at that time brought on retention. This was relieved by simple measures, but recurred from time to time, and was relieved by catheterization. He had been treated at irregular and spasmodic intervals by dilatation, but with only temporary relief. He had never, he stated, given the various surgeons whom he consulted a fair chance to cure him, and he ceased treatment as soon as he felt a little better. During some of the attempts at catheterization with a view to relieving these numerous attacks of retention, several false passages were made. I found it impossible to introduce even a filiform into the urethral tract on account of the size of the openings and false passages thus formed. Every attempt at instrumentation produced chills and fever. I performed perineal section and found the operation a most difficult one, requiring some time to discover the course of the urethra. Considerable hemorrhage from small vessels was encountered, which necessitated very careful packing of the wound with solid rubber drainage at the completion of the operation. The patient did well. There were slight chills and moderate fever for a few days after the operation. This, however, subsided and the case went to a rapid recovery. By the operation the urethra was restored to a caliber of 35 French, and a caliber of 32 French was permanently retained. It is now three months since the operation and the patient is in excellent condition.

Case 43: Deep Penineal Stricture of Gonorrheal Origin; Multiple Penile Stricture.—Man, 30 years of age; occupation, captain of a small sailing vessel. This man gave a history of previous attacks of gonorrhea and of symptoms of stricture dating back five years. The necessity for careful attention to the stricture had been impressed upon him by several capable surgeons, but on account of his occupation he found it impracticable to follow their advice. The stricture gradually diminished in caliber, with resultant increasing obstruction to micturition. An attack of retention coming on after a drunken bout, while he happened to be on shore, compelled him to seek surgical advice. There was no marked difficulty in introducing a small catheter in this case, but the peculiar circumstances of the patient, and the danger of subsequent attacks of retention induced me to suggest perineal section. A small guide was readily introduced and the stricture divided with great ease. The urethra was restored to a caliber of 36 French, meatotomy being necessary. The perineal wound was practically healed at the end of a week, at which time the patient was passing urine in the natural manner with the greatest possible comfort. He was dismissed at the end of three weeks, and provided with sounds necessary to keep up dilatation. When last heard from, three months after the operation, he had had no further trouble with his urinary organs.

Case 44: Deep Traumatic Stricture Complicating Prostatic Abscess; Prolonged Retention.—Man, 33 years of age; occupation, engineer, consulted me for retention of the urine which had lasted for thirty-six hours. There was a history of numerous attacks of gonorrhea, the first of which occurred ten years before. Symptoms of stricture developed some five years previously, and since that time the patient had been treated at irregular intervals by dilatation. He had never had an attack of retention until the one for which he consulted me. Some six weeks before I saw him he was induced to try electrolysis for his old stricture, which was again troubling him. The result was apparently a prostatic inflammation, and absolute failure as far as relief of the stricture was concerned. I have no criticisms to offer upon the application of electrolysis in this case, as have no means of knowing whether it was properly or improperly applied. I will simply state the history as it was presented to me. On examination I found a large peri-prostatic abscess bulging into the rectum, and apparently almost ready to rupture. The patient's temperature at this time was 104 Fahr., and he was in a profoundly asthenic condition. The indications seemed to me, however, to be perineal urethrotomy by means of which the abscess above the prostate could also be drained. In accordance with this idea the operation was performed, the urethra restored to a caliber of 35 French. The posterior portion of the incision in the perineum was carried quite deeply, the knife being thrust boldly in after the fashion of Cock's operation, and the peri-prostatic abscess was reached without difficulty. The operation was done without a guide, it being found impossible to introduce one into the bladder. The cavity of the abscess was packed lightly with a strip of gauze, and the usual perineal drainage was instituted. Several slight strictures were divided in the penile urethra, a meatotomy being found necessary. Within three days the temperature had fallen to normal, and aside from the rather slow healing of the sinus left at the posterior portion of the wound, communicating with the abscess, the subsequent course of the case was all that could be desired. The patient was passing his urine entirely per urethram at the end of ten days, but it was nearly three months before the sinus alluded to was closed. This patient has just been dismissed from my charge. Four months after the operation a 32 sound passes readily into the bladder.

Regarding the rôle of electricity in the production of the retention, I will state that at the time when I was endeavoring to test the merits of electrolysis in urethral stricture I had a somewhat similar experience. The retention, however, was relieved by simple measures within twenty-four hours. The stricture in this case was of comparatively large caliber.

Case 45: Deep Linear Stricture of Large Caliber of Gonorrheal Origin; Chronic Prostatitis.—Man, aged 35; clerk by occupation. This patient gave a history of repeated attacks of gonorrhea, the last of which occurred two years before I saw him. Acute prostatitis occurred as a complication of the last attack, and he had been annoyed since that time with an obstinate attack of gleet, with frequent exacerbations of subacute urethritis. The vesical neck remained excessively irritable, and for a few weeks an exacerbation of inflammation of the deep urethra or of the prostate was experienced, with resulting frequent and painful micturition. From time to time the urine contained a small amount of blood. All attempts at deep irrigation, or the passage of instruments, aggravated the trouble. Several surgeons who had examined the case pronounced it one of prostatic and vesical tuberculosis. The patient was thin and worn and had been excessively annoyed by the loss of sleep incidental to frequent micturition. Considerable pain in the back was complained of, and from time to time urinary fever developed, this being invariably the case after attempts at instrumentation of the urethra. The anterior urethra was exceedingly sensitive and was the seat of several strictures of moderately large caliber. Careful examination with the rubber exploring bulbs revealed a linear stricture of large caliber at the bulbo-membranous junction. In view of the condition of the prostate and the vesical neck, and the resistancy of the case to ordinary treatment taken in connection with the tendency to urinary fever, I believed that the combined internal urethrotomy and perineal section with prolonged bladder drainage offered the only reasonable prospect of a cure. The operation was accordingly performed, the urethra restored to a caliber of 35 French. Internal urethrotomy was performed upon the penile strictures and the deep stricture divided via the perineum, very little cutting being necessary to accomplish this end. The posterior urethra was thoroughly dilated and bladder thoroughly explored with the finger, nothing, however, being found. Drainage was kept up via the perineum for three weeks, during which time the patient was perfectly comfortable. The patient was discharged at the end of the fifth week. It is only a few weeks since the patient was dismissed, hence it is hardly fair to form conclusions as to the result. I will state, howeve, the patient is at the present time perfectly comfortable; has risen but once at night, and urinates about once in three hours during the day time. There is no doubt in my mind but that this patient will perfectly recover.

Case 46: Penile strictures; Reflex Vesical Irritation; Posterior Urethrotomy.—Gentlemen, 45 years of age, consulted me regaring vesical trouble which he had for ten or more years. He recognized the source of his difficulty as a gonorrhea contracted at the age of 30. Some five years after the gonorrhea he developed symptoms of stricture, frequent and painful micturition, a slow and sudden intermittent stream of urine being the principal characteristics. He had been treated in various ways. It was thought at one time that he had a stone and an exploratory supra-pubic cystotomy was performed with the result that no stone was found. Irrigations and topical applications of silver to the deep urethra seemed to aggravate

the condition. The contracted meatus had been slightly cut without any relief. At the time he consulted me the urine was normal, with the exception of a few shreds indicative of chronic urethritis, both the anterior and deep urethra being involved. Micturition occurred seven or eight times at night, and as the patient expressed it, "every few minutes during the day time," considerable effort being necessary to expel the urine, the stream being suddedly shut off several times during the act. This spasmodic shutting off of urine was attended by considerable pain. The patient was markedly neurasthenic, but his general nutrition was fair. Exploration of the urethra revealed three exceedingly irritable penile strictures of large caliber, and the meatus, which, in spite of a meatotomy which had been performed, was considerably contracted.

This case was a type of many which have come under my observation, and the patient's condition seemed obviously the result (1) of reflex irritation from the penile strictures, and (2) from infection extending back from the posterior surface of these strictures. I proposed internal urethrotomy and suggested the advisability of making a perineal section. Thinking there might be a linear band of contraction at the bulbo-membranous junction, and believing moreover that a couple of weeks' drainage and rest for the bladder constituted an important indication, I therefore performed both internal and external urethrotomy. I found the membranous urethra contracted and thickened with chronic inflammation with a large calibered linear stricture at the bulbo-membranous junction. The after-course of the case was uneventful. Drainage was kept up via the perineum for two weeks, at the end of which time the tube was removed and the wound allowed to close. The subsequent course of the case was most gratifying, the patient being now, four weeks after the operation, in excellent condition, rising at night only once to micturate, the act being performed only five or six times during the course of the day. There seems to be a progressive tendency to improvement, and I am perfectly confident that a complete cure will result. The urethra will now admit a sound of caliber of 36 French, although it will not be necessary to maintain the patency of the canal at this standard.

Case 47: Deep Stricture of Gonorrheal Origin with Recurrent Urethrorrhagia.—Man, 32 years of age, bookkeeper by occupation, suffered from a deep stricture of gonorrheal origin. This had been detected some seven years before I saw the case, and had been variously treated by dilatation, electricity and applications of nitrate of silver, etc. The patient stated that from time to time, usually precipitated by intercourse, he had quite free hemorrhages from the urethra. This symptom, he stated, was the most annoying of any that he experienced, and was the one which led him to seek more radical measures of relief than had hitherto been adopted. On examination I found an irritable resilient stricture of large caliber at the bulbo-membranous junction with three distinct coarctations of large caliber in the penile urethra. The exploration brought on very profuse hemorrhage, and it was attended by severe pain. Some days after my examination the patient suffered from quite sharp attack of inflammation of the vesical neck and prostate, this finally being allayed by cautiously attempted treatment by dilatation, the result being a repetition of my previous experience. After three disagreeable experiences of this kind I decided to perform perineal section. I performed internal urethrotomy for the anterior strictures and made a free division of the strictured band in the deep urethra by the external section. The urethra was restored to a caliber of 35 French. It is worthy of note that the hemorrhage at the time of the operation was trivial. I, however, packed about the perineal tube, as a matter of routine, iodoform gauze necessitated by the hemorrhage. The perineal tube was removed in this case on the third day, there being to my mind no necessity for prolonged drainage. Sounds were passed the first time on the fifth day, dilatation being repeated every third day thereafter. Patient was up and about at the end of two weeks, and was discharged at the end of the third week. It is now one month since the patient was discharged from my care, and he is in first-class condition. He has not performed the experiment of sexual intercourse to determine whether the hemorrhage will again occur, but from the facility with which large sound can be introduced, there is no question in my mind but that the operation has resulted in a perfect cure.

Case 48: Deep Stricture of Gonorrheal Origin.—A young man, 25 years of age, consulted me regarding a tight stricture of the deep urethra which had existed for three or four years. There was no history of traumatism, and the patient was in doubt as to ever having had a genuine attack of gonorrhea. An obscure history, however, of slight discharge at about the age of 17, which discharge lasted for a year or more, made the case sufficiently plain. There was no special indication for radical operation in this case, as far as the merits of the stricture itself were concerned, for the stricture appeared readily dilatable, as shown by a week's continuous, followed by intermittent, dilatation. The patient was unable to remain in the city for a sufficient length of time to accomplish much, and was therefore desirous of having a radical operation performed. I did an external urethrotomy, which was devoid of interesting features. The case was an easy and simple one. It has been only two weeks since the operation was done; the patient is about ready to return to his home and the urethra admits with great facility No. 33 French.

Case 49: Deep Gonorrheal Strictures with Multiple Fistulæ.—Man, 45 years of age, stockman; had experienced a number of attacks of gonorrhea, none of which had occurred within ten years. There was also a doubtful history of traumatism. Various attempts at treatment by dilatation had been made with temporary relief. Peri-urethral abscess had developed some years before I saw the case and had left several fistulæ, one of which involved the scrotum. The history of urinary obstruction dated back some fifteen years. For some time the patient had been rapidly failing in his general health. Attempt at exploration had been followed by chill and sharp "urinary fever." Urinalysis revealed nothing definite regarding the condition of the kidney, but more or less advanced disease of these organs was taken for granted.

After careful preparation by dieting, baths and the administration of urinary antiseptics, perineal section was performed, operation without a guide being necessary. Ether was the anesthetic used. All sinuses were carefully followed out and laid freely open. Hemorrhage from small vessels was unusually profuse, necessitating the Paquelin cautery at some of the deeper points in the divided sinuses and fistulæ. The urethra was found only after prolonged search, and at the completion of the operation the patient was greatly exhausted. He reacted fairly well, however, the urethra admitting 32 French and the perineal wound having closed, when two weeks after the operation anuria developed, uremia followed and death occurred within forty-eight hours.

Autopsy revealed a good condition of the operative field. The kidneys were pyelo-nephritic and showed evidences of recent acute congestion. I will remark in this connection that death in such cases is often superinduced by the anesthesia, even where chloroform is given, but especially when ether is used, but the fatal result occurs so long after the operation that the real cause is overlooked. I desire to insist on this point, because we are often unfair to chloroform. The latter drug declares itself in speedy and unequivocal fashion as a rule, while ether often destroys life so remotely that the true cause of death is lost sight of.

(To be continued.)

SELECTIONS.

The Present Status of Animal Therapeutics.—BY F. KRAUS. Manufacturing chemists are constantly producing new remedies, and scientists the world over are seeking specifics for the ills of man. But medicine in our day has certainly inaugurated a new era in the treatment of the parasitic infective diseases of which Behring's antitoxin is the most brilliant success so far. Another branch of it is the new "organ extract" or "animal" therapeutics, which is essentially a modern idea, although there is a suggestion of it in Galen's castoreum, and also in Pliny, where we read that the Romans ate the testes of asses in cases of impotency.

It is based on Brown-Séquard's and Bernard's theory of an "internal secretion" accompanying the external secretions of different glandular formations. The absorption of this internal secretion leads to the formation of important specific products. Bernard was led to this conclusion by observing the production of glycogen in the liver and comparing it with the secretion of gall. The list of organs that perform this function of an internal secretion, according to the latest theories, includes the pancreas, the supra-renal capsules, which seem to have the power to render innocuous certain poisons that develop in the body, the thyroid glands and perhaps also the hypophysis cerebri, the testes, the ovaries and the kidneys. In 1889 Brown-Séquard applied this abstract fact to practical medical use. He announced that the testes supply certain elements to the blood

which impart renewed energy to the nervous system, and in all probability, to the muscles also. Associating D'Arsonval with him in his researches, they soon announced this theory that all the tissues and organs of the body, non-glandular as well as the glandular, secrete specific substances, so that any failure in the function of any special tissue or organ may result in serious organic disturbances. From this theory came the proposition to supply to the organism the fluid extract of a healthy organ to substitute the lacking function of the diseased organ. Among all the numerous attempts to carry this proposition into execution, the administration of the extract or dried tissue of the thyroid gland has been most carefully studied and produced the most notable results. No one longer doubts that the thyroid gland has actually a specific function, since this was established by the experiments of Schiff, Hocher and Horsley-Semon. Another fact settled is the pathologic identity of cachexia and tetania thyreopriva, of idiopathic myxedema and true thyreopriva cretinism, which are now all classified as cachexia thyreoidea. There is also every probability that exophthalmic goitre and what is called status lymphaticus, and even acromegaly, will be found to be intimately related to the processes of the thyroid glands. We assume to-day that the function of the thyroid gland is to change or destroy certain substances which circulate in the blood and are injurious to the organism. This is called the auto-intoxication theory. In addition to this, the gland performs an important secretory function. Another theory proposed by some, is that these glands secrete a substance of great importance to the growth of the bones, muscles and nerves, and indispensable to the vital processes of the organism. In time these two theories may be found to harmonize into one. Our present morphologic knowledge favors the assumption of this idea. The epithelial cells of the thyroid gland form a wall around the entirely inclosed little pockets of the gland, which are filled with a peculiar, jelly-like or colloid substance. Between these follicles are placed the nerves, the blood and the lymph vessels. This colloid substance is also found in the lymph passages between the pockets. The capillaries are intermingled with the epithelial cells, in some cases even boring into them. Changes in the epithelial cells testify to the fact that they secrete a specific substance. Hürthle distinguished one secretion accompanying growth of the follicular epithelial cells, and another as they degenerated. In the former, what Langendorff calls the colloid cells, are principally involved. This is the first secretory change of the cells in the protoplasm visible to the eye, and yet the secretion accompanying degeneration is the preliminary which makes the other possible, as it precedes subdivision. The protoplasm degenerates and flakes off from the wall of the follicle and mixes with its contents; the follicles pass it along from one to another and into the lymph passages. This dissolution of the epithelial cells is a necrosis inseparable from the vital processes of the organism, and accompanying it, is a special secretion. The process of secretion in the glands is not under the control of the nervous system. The stimulus is imparted by a certain state of the blood. Hürthle has reported certain observations and experiments which directly confirm this theory. One proof of this is seen when the biliary duct is tied and jaundice thus produced; a simultaneous secretion of colloid substances occurs in the thyroid glands, of great intensity, appearing in the colloid cells, the lymph passages and even in the epithelial cells, which did not normally occur. This secretion works its way from the follicles into the lymph passages of the gland either by disintegration of the follicular wall as Biondi believes or through the spaces between the cells, according to Hürthle. These spaces open up when required, but have no permanent character. Whether the colloid substance is then taken directly into the blood or not is still unsettled; in any case it soon finds it way into it somewhere. The thyroid gland and the suprarenal capsule are the only glands yet discovered in which the transmission of their secretions directly into the blood has been watched and followed by the eye. As yet we have unfortunately no chemical proof of this specific substance. Mucin, or something resembling it, is found in the skin and tissues, in the gastric juice, etc., of patients suffering from idiopathic myxedema, but not in the quantity nor with the regularity we might expect if we accept Horseley's theory that mucin is formed in the tissues to a toxic extent when the thyroid glands fail in their regular functions. The results of Wagner's and Hammerschlag's experiments, injecting mucin into a cat and producing tetanic symptoms, are still waiting for an explanation. Experiments with dead thyroid gland substance on animals, and also on normal and diseased human beings, as well as the thyroidectomy operated on diseased persons, all tend to confirm the theories advanced above. Numerous experiments with normal and goitrous persons also seem to demonstrate the fact that the normal thyroid gland plays an important rôle in controlling and distributing the phosphoric acid in the organism. When this gland fails in its functions, the processes of growth in the bones and nervous system are disturbed because they miss the phosphoric acid necessary to them, or perhaps receive too much of it. If the gland is abnormally extreme in its functions, then P_2O_5 diabetes results, with a lack of phosphoric acid throughout the body. The functions of the thyroid gland are apparently more important to the organism during its development than after muturity. It is in proportion to the total weight, far larger in the newly born. Experimental thyroidectomy is far more fatal in young animals, and in human beings over 30, cases of cachexia following removal of a goitre are almost nil, while before puberty cachexia is an inevitable consequence. Gley and Christiani have asserted that accessory organs can carry on the functions of these glands when necessary; and since Lesas announced that there was a compensatory hypertrophy of the spleen when the thyroid gland was removed, this theory has been coming to the surface again and again. But more recent researches prove that this is a mistake. Albertoni and Tizzoni, and also Gley have found that cachexia does not occur any sooner in animals whose spleen has been removed, than in others with a normal spleen. De Quervain has studied with particular attention the action of the spleen in cachexia thyreopriva without finding any vicarious hypertrophy at any stage of the disease. Examinations of the spleen after death in five cases of strumiprivous cachexia, showed it smaller than usual in four cases, with one of normal size.

Virchow has called attention to the analogy between the tissue of the thyroid gland, the envelope of the supra-renal capsule and the large lobe of the hypophysis cerebri. He calls any inflammation of these tissues a struma. Schiff was unable to find any vicarious action in the capsules for the thyroid gland, but Rogowitsch observed changes in the hypophysis of animals after thyroidectomy. Stieda confirmed this observation and recorded the changes. But neither noticed any unusual colloid secretion. Few observations have yet been made on human beings; the English myxedema committee could not discover any change in the hypophysis in five cases investigated. Bourneville and Bricon record a case of sporadic cretinism where the thyroid gland was missing, with a hypertrophied hypophysis. Gley, Vassale and Sacchi have experimentally removed the hypophysis and believe that it was followed by the same results as thyroidectomy. Lange implanted in a dog in the course of a month eight different hypophyses, some under the skin, some in the abdomen, some in the tunica vaginalis and some in the testes. Then he performed thyroidectomy upon him. Cachexia followed in the usual way, a typical case. Dissection showed that each hypophysis had been aborted. I feel that further research is needed before any authoritative opinion can be advanced, and I warn investigators not to draw pathologic

conclusions too hastily from the size of an organ like the hypophysis. The intimate relations between the hypophysis and the thyroid gland can be traced in the development of the organism. Dohrn has demonstrated that the former is evolved out of the ectoderm and believes that it is the remains of an original gill formation in front of the mouth. The hypophysis of the petromyxon has never been removed from its original position and stands on the same plane as the thyroid gland.

Marie and Marinesco were the first to connect the thyroid glands with acromegaly. Souza-Leithe's work on acromegaly announced that atrophy of the glands is far more frequent an accompaniment than hypertrophy, and that the marked increase in the size of the hypophysis is the only inevitable pathologic anatomic indication in acromegaly, which he considers a pituitary cachexia. We are still in doubt as to the functions of the thymus gland, although Marie asserts that in congenital myxedema the thymus is hypertrophied and does not decrease in size. It is also hypertrophied in myxedema after maturity. This persistence of the thymus gland is also noticed in acromegaly and not infrequently in exophthalmic goitre.

The different phenomena in thyroid cachexia in human beings and in animals whose thyroid glands have been removed, all tend to confirm the above theories and suppositions in regard to the functions of the thyroid glands.

All experiments and observations show that this cachexia is toxic. The nervous disturbances accompanying it are either increased action resembling tetanus in its effects or paralysis, producing the opposite effects. The seat of all this nervous trouble is in the medulla oblongata, according to Lanz's investigations, but the tetanic convulsions are controlled by higher centers, we know. Death is produced by a bulbar paralysis of the respiratory organs. Other nervous complications are disturbances in the circulation, respiration, digestion, growth and urogenital functions, accompanied by the special symptoms of decreased pressure of the blood, decrease in the number and power of resistance of the erythrocytes, with leucocytosis, diminished amount of O. in the arterial blood, increased rapidity of respiration, glycuria, depressed sexual function, menstrual disturbances, vomiting, stunted growth and difficulty in swallowing. The chemic theory of animal therapeutics is this, that all these symptoms can be cured by introducing into the organism in some way the substance of which the thyroid gland is composed.

The epoch-making discovery that death could be prevented in animals whose thyroid glands had been removed and the animals restored to health, by implanting sound thyroid glands with subcutaneous injections of thyroid gland extract, was confirmed by the individual researches of Horsley, Eiselsberg, Gley, Vassale, Tizzoni, Centanni and Mouru. In 1889 and 1890 Bircher and Horsley applied this discovery in their practice and implanted a sound thyroid gland in the abdomen in severe cases of cachexia thyreopriva. Horsley preferred to use glands from apes or sheep for intraperitoneal or subcutaneous implantation. Sixteen cases are now on record treated with part human, part animal thyroid glands, some of them with very favorable results, others with only temporary improvement. Only in the cases of Collins and Macpherson was the improvement observed as long as a year and a half. Wölfler's "Surgical Treatment of Goitre" recommends the immediate insertion of a thyroid gland from a lamb, dog or cat in the neck or peritoneum whenever struma maligna has made necessary the removal of a goitrous growth. Even where the effect is only temporary it perhaps may stimulate the accessory glands, the hypophysis cerebri, etc., to an extra compensating function.

It is to a pupil of Horsley's, Murray, that we owe the next advance from these primitive to more scientific methods. Murray prepared for injection a carbolized glycerin extract of thyroid glands from animals, which was used in myxedema and cretinism and quite supplanted implantation of the glands. Bouchard inaugurated a similar improvement in France. Mackenzie in 1892 tried to produce the same results by feeding raw thyroid glands to his patients, which was also attempted by Howitz in Denmark. Since then the dead thyroid gland is administered "per os" almost exclusively. A London druggist, White, prepares a pulverized extract; Vermehren, of Copenhagen, makes a pulverized glycerin extract which he calls thyroidinum, dose 0.01 to 0.03 gram pill.

Merck also prepares a thyroidinum siccatum, of which 0.6 grams equal one thyroid gland (sheep). It is prescribed as follows: Thyr. sicc. 2.0. Terr. sil. et mucil. tragacanth. q. s. f. pilulæ No. xx. One to six pills a day. Or else: Thyr. sicc. 2.0. Sacchar. lact. 18.0. M. f. trochisci No. 20. Sig. One to six pastilles a day. Nielsen recommends pilulæ gld. thyr. siccatæ. Leichtenstern orders a glycerin extract. But for reliability of action the Merck preparation is surpassed by Burroughs and Wellcome's tabloids of compressed dry thyroid gland. One tabloid equals one gland (sheep). Usual dose one-half to four tabloids a day, although I have myself administered five and six.

Experiments with these medicines on normal animals show very few results. Woodhead claims that they produce heart disease in rabbits. Hoffmann observed that healthy animals lost flesh rapidly as an effect of copious dosing with them. Vermehren's experiments with healthy persons resulted only in increased diuresis in the young, accompanied by loss of flesh in older persons, with no subjective disturbances or symptoms of any kind.

Many physicians have tested the remedies on themselves. Wendelstadt took several pastilles a day for several weeks with no result except a loss of eight kilograms in weight. Fenwick and Nielsen experimented with negative results, but Beadles, Johnston and Maude reported headaches, more rapid pulsations of the heart and insomnia following subcutaneous injections.

Experiments made quite recently by Bleibtreu and Wendelstadt show that there is a marked decrease in the albumin of the body under the influence of the thyroid gland substance, which a compensating diet failed to restore. Scholz records what had been already noticed in my clinic, that doses which, in healthy persons and in those suffering from exophthalmic goitre, increase the P_2O_5 in the excretions, do not affect the albumin.

The effect of the remedies in disease is largely individual. The younger the patient the more rapid and thorough the results. But even with advanced years the results are favorable. The susceptibility varies very much in different cases. Symptoms occur resembling those of exophthalmic goitre after very large doses (ninety-two grams raw gland in eleven days)! One questionable case is reported of myxedema where death ensued after eating part of a single sheep's gland. In the majority of cases the administration of thyroid glands is followed by a "reaction," which is called "thyreoidism" when it assumes formidable proportions. This reaction appears after the first doses, especially in cases of myxedema. It begins by a slight rise of temperature and increased pulse. Too large doses are followed by fainting and collapse. All the phenomena observed in this animal therapeutics pivot, of course, on the stimulus to the central nervous system and the increased processes of change in certain substances in the organism. The increased diuresis is probably due to the action of the heart. The supply of nitrogen is increased, sometimes resulting in albuminuria or glycosuria. In a few cases especially unpleasant effects were noted, epileptic, stenocardiac and uremic attacks, tonic cramps in the extremities, stupor, loss of consciousness, and eruptions, exanthema, urticaria, erythema, etc. A squamous dermatitis often follows a cure of myxedema. These latter phenomena are the foundation for the application of these remedies to skin disorders, and the rapid loss of flesh has indicated thyreoidin as a cure for obesity.

The different diseases to which this treatment has been applied are as follows: Congenital and spontaneous myxedema; cachexia and tetania thyreopriva; tetania; struma; parenchymatosa; acromegaly; exophthalmic goitre; general obesity; skin diseases—psoriasis, lupus, eczema; syphilis, leprosy, tuberculosis, cancer; mental disorders, epilepsy.

In myxedema more than 150 cases observed testify that the success of the thyroid preparations is almost absolutely certain in the spontaneous, operative and infantile forms of the disease. The few failures are not to be considered in the presence of such a number of cases cured or vastly improved, any more than the unpleasant but rarely serious attending complications in a few others. The first enthusiasm over this "therapeutic miracle" is still justified in these cases. Only the permanency of the cure is still open to discussion. The psychic complications of myxedema (amentia, stupor, acute melancholy, and mania) are also cured as the cause is removed, as is repeatedly observed in actual practice. There has not been sufficient material accumulated to decide authoritatively in regard to the efficacy of this organ therapy in tetanus. In my own practice I could not detect any appreciable results after its use, although theoretically there ought to have been.

The many points of resemblance between myxedema and exophthalmic goitre led to great expectations in the treatment of the latter with the thyroid extract, but results have not confirmed them. Some cases were made worse by its use others were cured, but only in young persons. I observed personally one cure accomplished by feeding sheep's glands, but the disease was in an early stage. Another similarly treated grew worse until treatment was abandoned. Personally, I have ceased to hope for much in this disease from this treatment.

The casual resemblance between myxedema and acromegaly stimulated many to experiment with the latter in the same way, and in a few cases a certain amount of success was obtained.

But it was in struma that the advocates of animal therapeutics hoped to score their most valuable success. Of course cystic, fibrous and malignant struma are too far advanced to derive any benefit from this treatment but simple parenchymatous struma in young persons yields to it rapidly, and permanent cures ensue in case after case. Bruns reports nine out of twelve cases cured and all improved. Four children (4–12) were entirely cured in four weeks. He used large doses but did not notice any decrease in weight except in one case. He administered fresh raw glands from calves and sheep. Reinhold fed raw sheep glands to cases where mental disorders accompanied the struma, and in five cases out of six the struma disappeared quite rapidly and completely. No inconveniences were noticed. Ewald reports eight cases of struma treated with thyroid tablets, in all of which the abnormal size of neck was decreased. Leichtenstern reports one case treated with tablets that showed no improvement. Miculicz uses the thymus gland. With the exception of the goitre, all the symptoms in a case of Basedow's disease were benefited by eating thymus glands.

I hope that every practitioner will assume the responsibility of assisting in the accumulation of knowledge in regard to the effect of this thyroid treatment on struma. In all the cases reported so far, we find it is the diffuse hyperplasia in the young which responds best to it.

The results of this treatment in mental disorders have been very meager. Macphail, Bruce and Wagner have used it, and a few epileptics have been successfully treated with it. But I consider this application of it as well as the use of it in cutaneous troubles, foreign to its physiologic foundations, and destined eventually to bring discredit upon it, although Menzies reports certain favorable results attained in malignant syphilis.

Tuberculosis also is outside the pale of favorable results from this animal therapeutics, as Bramwell has shown and my own experiments have confirmed. It has no influence whatever on the local processes in the lungs.

But in the treatment of general obesity, it seems to have a promising future, as has quite recently been demonstrated by York Davies, Leichtenstern and Wendelstadt.

Twenty-four successful cases out of twenty-seven is a percentage that establishes this treatment as an efficient cure for obesity. As it tends to weaken the patient, no change is made in the diet or mode of life, so that the general health is undisturbed. The greater the amount of flesh the more rapidly it vanishes with this treatment. The diuresis was increased at first. The anemic obese seemed specially benefited. Leichtenstern's successes in this line are very important. If the results are permanent and the treatment without perilous after-consequences, we will certainly have in animal therapeutics a specific against undue obesity.

But my own observations and experiences lead me to call attention to its limitations, as it is only in certain kinds of obesity that it is beneficial. Robust, red-lipped young people, with strong muscles and a good appetite, did not lose more than two to five k. in their weight, and I noticed symptoms of palpitation of the heart after treatment. Anemic obesity is the kind benefited, and in all cases the action of the heart must be watched.

I have taken pains to place before you the details of the medicatio thyreoida as a shining example of what can be accomplished by concerted effort, in experimental research and the clinic. It is in fact, a brilliant, almost marvelous achievement which may be a stepping-stone to future successes of vital importance.

The pancreas has also been used in treatment like the thyroid gland, but with little or no success, although such men as Minkowski, Hedon and Gley have tried it in every form. Several times I have used it in my own practice, and should try it again in cases of diabetes that indicated pancreatic disturbance. The best method of administering it is "per os."

Experiments with the supra-renal capsule show that its removal in animals is followed by emaciation, feebleness and death, and that injections of fresh extract of the organ retard death at least. Abelous, Langlois, Pfaunder and Holl have been especially active in these researches. The latter announce that the capsules secrete a substance in the form of very fine granules, which find their way into the blood, but not through the lymph passages of the gland; a discovery that ranks in importance beside Hürthle's in regard to the secretions of the thyroid glands. No practical results have been secured yet; a few cases of Addison's disease have been treated, but with no success except an increased diuresis.

The much-criticised medicatio orchitica was inaugurated by an interesting experiment by its author, Brown-Séquard, on his own person. By injections of the secretions of the testes he believed that he had regained all the energy of earlier years. He was able to resume his work in the laboratory, and the dynamometer registered increased motor power. Diuresis increased and the torpid condition of the bowels gave way to normal processes. Experiments on other persons resulted also in increased cerebral action and revived sexual impulses. Brown-Séquard drew the conclusion from these facts that the secretions of the testes exerted a specific dynamogenic force on the nervous system. He concluded, also, from these premises, that early castration in men and animals produced profound disturbances in the nutrition and growth, and that sexual excesses must play an important role as one of the causes of various nervous diseases.

The best preparation of Brown-Séquard's testes extract is that made by W. Vogt in Geneva. It is for subcutaneous use, in doses of from 2 to 8 grams a day. The indications for its use are conditions of weakness, senile or resulting from malaria, hemorrhages, leprosy or tuberculosis, and nervous troubles,

especially tabes dorsalis, neurasthenia, epilepsy, chorea, paralysis agitans and psychic disorders.

Fürbringer, Senator, Ewald, and some others, consider this orchitic remedy utterly valueless, and the only effects produced due to auto-suggestion alone. In my own experience, I have never known it to succeed in cases of impotency, but I have witnessed surprising improvement in muscular energy in several cases of neurasthenia. Pregl, of the Rollet Institute, is soon to publish an account of his observations on this subject, which will probably add much to our knowledge of it.

Babes and Paul have made a glycerin brain extract, which seems to be only an offshoot of the orchitic remedy idea. It has scarcely been tested as yet.

The spinal cord seems to possess a certain curative power in anemia, but it is not yet time to express any opinion in regard to it. In conclusion, I will say that animal therapeutics constitutes an advance in therapeutics which every practitioner must appeciate. But I do not disguise the fact that it includes a certain danger for our science.

It seems a serious matter to me to consider these therapeutic methods as such *in genere*, and the attempt to substitute directly a sound for a diseased organ is certainly an absurd undertaking. An industry, not any too careful, has already assumed control of this animal therapeutics, and a crowd of indiscriminating writers will probably continue to announce signs and wonders that throws the old women's remedies, "virgin's urine," etc., into the shade. The only way to separate the wheat from the chaff is not by way of the laboratory alone. Physiologic chemistry and experimental physiology may separate the secretions of the organs into their components and determine their toxic processes, but, after all, it is the practicing physician who applies the facts they discover. He must be neither too skeptical nor too confiding, but remember what Dedalus said when he entrusted his wings to his son: "In medio tutissimus ibis." Translated from the *Therapeutische Wochenschrift* of Jan. 26, 1896.

Technical Terms in Electricity; Their Simplicity and Practical Importance.—We are confronted by the manifestations of electricity on every hand nowadays, and the modern physician should be posted not only in regard to his own little therapeutic electric machines, but also in regard to the applications of electricity on a large scale, in order to prevent accidents, and manage them after they occur. The technical terms used in electricity are beautifully simple and practical, while they commemorate the names of men whose contributions to science and industry are inestimable. For the sake of convenience, we speak of the electric current as a fluid, which it is not. We must remember that this is a figurative language. The fact is, that nothing actually flows from one pole to the other, but that the intervening substance has imparted to it by the electrification some "mode of motion," some condition of matter, some "vibration or tension of the molecules of the body said to be electrified." But it resembles a fluid in many respects; for instance, the way in which the electricity always rushes from the higher potential to the lower, through the intervening wires or substances, as water always seeks the lower level. The measure of the force which the electricity exerts in this, is called a volt. The measure of the resistance offered by the conductors to this electromotive force, similar to the resistance and friction offered by the pipes to flowing water, is called an ohm. As the electric force triumphs over the resistance, the amount of electricity that passes on over the circuit, divided by the time, produces the measure of the intensity of the current, the ampère. The unit of electrical power is the product of the pressure (electro-motive force) of a current in volts, when multiplied by the volume expressed in ampères. The watt is the term used to express this volt-ampère unit of electrical energy. It equals 1-746 horsepower. The watt is the force of a current one ampère at a tension of one volt, and this term shows best the admirable simplicity of this technical language. If you wish to light your residence with twelve lamps of fifteen candle-power each, when you are told that each candle-power represents 3.5 watts, you know at once that you require 15×3.5 watts, which is 52.5 watts, and for twelve lamps, 630 watts. The other terms used are the farad, the unity of capacity; and the coulomb, the working unit of electricity. This represents a current having the strength of one ampère, passing through a one-ohm resistance conductor in one second of time. With these terms we all ought to be familiar, and not send back for the volts, when an invoice of "fifty lamps of twenty candle-power and forty-five volts" is delivered at your house, as the story is told of some one.—*Journal des Sciences Méd. de Lille*, January 4.

Filaria of the Eye.—According to the *Annales d'Oculistique*, Dr. Hirschberg has recently exhibited before the Berlin Medical Society a specimen of filaria which was extracted from the eye of a negro. It was situated between the conjunctiva and the sclera. It was recognized as a female worm by its rounded head and pointed tail. In the last century a French physician, Vigo, while traveling in the provice of Angola, noticed that this worm was frequently present in the eyes of negroes. Vigo performed five operations for its removal, two of which were successful. He introduced a curved needle between the worm and the sclera and pressed on the worm with this needle so as to force it out through the conjunctiva. During the present century, a physician of the French navy removed a similar parasite from the eye of a Congo negro. Another physician at the Gaboon observed analogous cases and claims to have found that the worm could emigrate from one eye to the other by a subcutaneous route around the root of the nose. He stated that the patient could feel the passage of the parasite, and that there was intense pain when the worm approached the cornea, into which, however, it never penetrated. This parasite was also observed in America and in the Antilles at the time when slaves were imported. Europeans who reside, or who have resided, in countries where this parasite exists may also be bearers of it. A Scotch woman, thirty-two years of age, who had lived at the Mission Station of Old Calabar, in the northwest of the Cameroons, found, on her return to Europe, that she had a worm in her eye. It was extracted by Dr. Argyll Robertson. The mechanism of the introduction of the worm into the eye is not understood. It has been suggested the mosquito is the host in which the larvæ of this parasite are developed. After being thus developed in the insect they are then introduced into water. The worm exists in endemic condition from Angola to the Gaboon, from the fifth degree of north latitude to the tenth degree of south latitude on the west coast of Africa.

Chronic Cancer of the Breast of more than Thirty Years' Duration.—Munn (*British Medical Journal*, Feb. 22, 1896) read a paper before the Clinical Society of London concerning chronic cancer of the breast, which formed a continuation of two former papers read before this Society in 1872 and 1878 and recorded in Vols. vi and vii of the Transactions. The patient first came under observation in 1862, being then 37 years old, and mother of one child. Menstruation had ceased at 30. There was then a scirrhous tumor of the breast and a chain of enlarged glands in the axilla. The breast was removed by Mr. Munn in September, 1862. Four years later pain was complained of in the muscles of the arms and the fingers; this pain soon passed away. In 1868 the patient was no worse. In 1878 a limited recurrence took place in the upper angle of the scar. In 1893, more than 30 years from the commencement of the tumor there was an increase in the cancer deposits, and the arm was swollen. In October, 1895, Munn found the patient still living and energetic, and doing work as a charwoman. The patient in Case 2 (1878) died a year after Munn's report of the case. The autopsy revealed secondary tumors in the lungs and in the liver. The exact duration of the disease in this case is not mentioned in Mr. Munn's last paper. Drawings were presented showing the carcinomatous structure. As a further illustration of chronic cancer mention was made of a case of which microscopic sections of the recurrent tumor removed by Mr. Munn were presented to London Pathological Society in 1880, the original tumor having been removed seven years previously by Mr. Curling. A second recurrence was operated upon by Mr. Lawson in 1882, and the patient was, until lately, still living. In the discussion Mr. Marsh recalled the case of a woman, now 71 years of age, who has had a carcinoma of the breast almost continuously for eighteen years. A few weeks ago he has made the tenth operation which she had undergone. These cases show that patients in whom recurrence does not take place within three years can not always be regarded as cured.

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SATURDAY, MARCH 14, 1896.

THE ATLANTA MEETING.

The universal recognition of scientific progress and revolution can not be avoided. The man who doubts this must be very blind and very deaf and very feeble mentally.

In all the large cities the progress in electricity forces itself into observation, and an intense expectancy pervades everywhere. The field of medicine is no exception. The Baltimore meeting appeared like many others which had gone before. Members who listened to the various papers read failed largely to recognize their true significance. Only after, when these papers appeared in the JOURNAL from week to week, did the fact dawn that medicine was advancing. This Baltimore meeting, more than all others, exhibited a restless onward movement of medicine outside of conventional lines and boundaries of the past. This was not so much apparent in the novelties and innovations proposed as in the doubt and questioning, and demand for evidence for the present theories.

The pages of the JOURNAL show that a new era has dawned for American medicine, and the AMERICAN MEDICAL ASSOCIATION gives voice and expression to this more clearly than ever before.

Local and State societies, and societies of specialists, all have a power and place in this movement, but the National society, of all others, must concentrate, mobilize and direct this progress. The coming meeting will show a great advance in many ways and higher ground will be occupied along many lines of science. The application in medicine of the new photography from the Roentgen rays will be presented with some new results. New discoveries of brain anatomy, and new facts along many practical lines of work, are already promised. The scientific outlook for the coming meeting is of unusual interest. National medicine has passed beyond any personal local influences and demands the best facts from every source. The village and country doctor is welcomed for any facts he may bring. Distinctions of place and position all become insignificant compared with truth and new facts, and new evidence from any source.

The many sectional meetings give every man a chance to compare his experience and opinions with others from all parts of the country.

Critical physicians may stand aloof and sneer down the ASSOCIATION as a medical ring, and mob convention, but the fact can not be ignored that it is the most influential gathering on this continent. The JOURNAL and its contents are the unmistakable evidence of this fact. Not far away this will be recognized and the ASSOCIATION meetings will have thousands in attendance where it has only hundreds now.

The Atlanta meeting will bring out a large number of active men in the new South land who will be leaders in the years to come. All members from the West and North should embrace this opportunity to create a new scientific interest, and enlist a new class of men, who will bring new facts and new experiences to our work. It should be a duty and source of pride to every member of our ASSOCIATION to attend its annual meetings and prove to their home circle of friends that they are not merely medical hewers of wood and mechanical nurses, but scientific men interested in the great movements for the welfare of humanity.

More than this every member who attends the ASSOCIATION meetings secures a certain character and position, not only to himself personally, but to those he comes in contact with. This can not be bought with money or power; it only comes from association and interest in medicine with others at these great National gatherings.

Let every one show his interest in science, in humanity, and in the struggle against disease and death, and come to Atlanta, and he will go back stronger and better fitted for his work.

THE SIGNIFICANCE OF GRADE, RANK AND TITLE IN THEIR NAVAL MEDICAL RELATIONS.

The development of the new Navy is a matter of popular concern and the expensive outlay it involves is acquiesced in by the most exacting appropriation watchers. That the *personnel*, barely sufficient for a few old time wooden vessels, needs to be similarly expanded in men and officers apace with modern battleships, cruisers and coast-defenders is not questioned, but Washington correspondents declare that Congress finds such difficulty in reconciling the opposing factions of the Navy that in all probability the session will close without any legislation in this direction. It may be profitable for us as physicians to inquire in

what manner the interests of our naval medical confrères are affected by this internecine conflict, and who is responsible for obstructing the reorganization which is admittedly necessary.

It is well known that the officers of the Navy have been for many years divided into two bitterly hostile parties—one comprehensively termed the *line*, charged with the executive, navigating and artillerist duties—the other collectively, the *staff*, comprising the medical, pay, engineer, construction and certain minor corps. The same divisions of line and staff exist in the Army but without factional friction and enmity, and the civilian, the citizen soldier and the regular army officer are equally unable to understand why this antagonism should prevail in the navy which is unknown in the army—why it should exist in the navy of the United States and not in that of other nations. The naval medical officer is as accomplished, as competent, as well appearing and as well descended as his army colleague; why then should a naval line officer seek to assert a military superiority over his medical associate which never occurs to the army line officer to exhibit toward the medical officers of his own military family? The embryo naval cadets come from the same sources as the military cadets; they represent every class of society; some of them are of very humble antecedents, but a single term at the Naval Academy often makes the son of the laborer as the son of the millionaire an arrogant and offensively supercilious pretender to inherent superiority (though his own father and brother may be staff officers), which neither his duties nor requirements justify.

The status of the army officer is as well understood outside the army as within its ranks, through the wide distribution of the volunteer forces and national guard. Every one knows how they are graded; everyone knows what is a colonel though he be of the engineers or artillery, a major though of the medical corps or cavalry, a captain though of the infantry or pay corps—the special arm or corps being indicated when officially necessary by distinctive titles and uniform, and on occasions of merely social intercourse being never considered. This is so simple and rational that it is puzzling to understand why there should be any difficulty about it in the navy. The commissioned officers of the navy are arranged by law in certain *grades*: rear admiral, commodore, captain, commander, lieutenant-commander, lieutenant, lieutenant of the junior grade, and ensign, which are commonly but erroneously spoken of as *ranks*, the terms *grade*, *rank* and *title* being confounded and assumed to be synonymous and appropriated by the line as their generic distinctions, whence their claim that they alone constitute the navy, while all other officers, whose commissions are phrased in identical terms with their own, except as to *title*, are, they assert, only accessory but not essential, and this fallacy is the single *casus belli* in the service, as a clear understanding of the significance of terms will make evident.

Grade is that something, the law has conferred upon *all commissioned officers*, which serves to show the officer's place, position or status in a military organization. *Rank* means simply seniority or precedence in the several grades and depends upon the date of the officer's commission; thus, one officer ranks another in his own grade. While custom has sanctioned using grade and rank as synonymous, this is not correct, since the word rank is not employed in the statutes to give any officer his official place or position in the naval organization any more than in the military. Grades in the military organizations of all civilized nations are practically the same, corresponding names being given these grades in the several languages, and to show the correspondence of naval grades with these military grades, the law defines that a rear admiral shall have the relative rank of major general, commodore that of brigade general, captain that of colonel, etc., the expression *relative rank* not implying any other relation than that of absolute equivalence. Unfortunately, the same term *relative rank* has been used in defining the correspondence of the grades into which the staff corps have been divided with those of the line, for while the intent of the law is precisely the same in the one case as in the other, sea-lawyers have quibbled to make it appear that relative rank as applied to staff officers is not real, though the same reasoning would invalidate their own precedence with the army. In the case of the medical corps the grades are medical director, medical inspector, surgeon, passed assistant surgeon and assistant surgeon—these being in fact only *titles* and not *grades;* since a medical director may have the relative rank of commodore or captain, a surgeon that of lieutentant-commander or lieutenant, and a passed assistant surgeon that of lieutenant or lieutenant of the junior grade; while in the engineer corps the confusion is still greater, for the *title* chief engineer is bestowed upon five separate grades of officers. The sole cause of the lamentable dissensions in the navy is the assumption by the line of a vested right to be considered the navy, all other officers not being officers at all, because they are not specifically stated to be of the same grades as themselves and they oppose legislation to this effect, affecting to believe that it would lead to conflict of authority, herein making the mistake that authority is inherent in any grade, and in face of the army precedent where no such conflict occurs. It is unnecessary to declare that no medical officer in the navy aspires to be confounded with any line officer, nor does he wish to exercise his functions, nor desire anything but to have the actual grade to which his commission entitles him established as has been done in the army, coupling with it the corps to which he belongs, and if

necessary a distinctive medical title to indicate his specific duty.

The significance of the terms grade, rank and title are, it is hoped made apparent. There is no reason why, as in the army where Colonel ——, Fourth Artillery, Major ——, Engineer Corps, and Captain ——, Medical Corps U. S. Army, sufficiently indicate the individual and his office, Captain —— of the Line, Commander —— of the Medical Corps and Lieutenant —— of the Engineer Corps, U. S. Navy, should not be equally distinctive. The precedent already exists in the Navy, where Captain —— of the Marine Corps fills his comparatively junior grade, despite his title without in any way detracting from the greater glory of Captain ——, who may command the vessel on which both are serving. As already stated, the misunderstanding in the navy arises from the false premise that the titular grades of the line indicate inherent duties instead of being merely gradation terms. The word captain denotes nothing more than the third grade of commissioned officers in the navy, as it does the sixth in the army and marine corps, and not an individual, who of necessity commands a first rate man-of-war. When such duty is assigned to him, his distinctive title becomes "captain commanding," which sufficiently indicates his specific duty. There are today on board the flagship *New York*, three men who are officially designated as captain, the captain commanding the ship, the commander who is chief of staff and the captain commanding the marine guard. Nothing has been heard of a conflict of authority between these men by reason of all possessing the same title, although they belong to three different grades, the word captain in the case of the marine officer, as in the army, being three grades below that of captain in the line. Why should there be any conflict if the medical officer or engineer were so designated in their respective corps? Congress has therefore only to declare that all commissioned officers of the navy shall be divided into certain grades, as in the army, the corps to which each officer belongs being appended, and no more will be heard of line and staff contentions. Indeed the only dissension will be that which has recently developed between the young officers of the line, who wish to turn out the old ones, and these old line officers, who do not wish to be turned out, arguing most plausibly that the man who has seen thirty years faithful, efficient, honorable service has far more claim upon his country than the youth, who has served but three.

ACUTE LEUKEMIA.

Leukemia and other forms of essentially chronic blood disease are of more than ordinary interest because of their as yet unknown etiology. It would seem that not until their genesis is fully made clear can there be any reasonable chance for securing efficient therapeutic measures. Any observations that throw some new light upon such obscure diseases as leukemia are consequently of great value from a practical as well as from a theoretical point of view. Leukemia occasionally appears in the form of an acute disease. This manifestation might, if thoroughly studied, furnish some reliable indications as to the direction in which the solution of the etiologic problem referred to should be sought.

A. FRAENKEL[1] has recently published a series of articles upon the acute form of leukemia. He deals with the observations relative to six male and four female patients. The duration of the disease varied from twenty days to sixteen weeks. In four patients the age was between 13 and 18 years, in six between 24 and 34. Characteristic in all the cases was the sudden onset and the early appearance of symptoms such as multiple hemorrhages, which in chronic leukemia are observed only in the latter periods of the disease. In eight cases, in which the blood was carefully examined, the findings were uniform but of a somewhat different nature, in some respects, than in chronic leukemia. In addition to the falling off in the red corpuscles and the increase in the white, it was found that the excess of white cells depended exclusively upon the presence of an increased number of mono-nuclear elements, or lymphocytes. These lymphocytes were of varying size. They showed transition forms, however, that pointed to their all belonging to the same developmental series. The larger were the most numerous and showed a large nucleus, poor in chromatin, that almost filled the whole protoplasmic cell body, The nuclei occasionally presented divisions into two. Eosinophile or neutrophile cells were not present. Basophile cells were found occasionally. The number of polynuclear leucocytes was very small. In three cases mitotic figures were present in the blood in the capillaries of various internal organs. Nucleated red corpuscles were found in small numbers; only in two cases were such cells rather numerous. On the warm stage these lymphocytes failed to exhibit any ameboid movement.

Smear preparations from the spleen, the bonemarrow and the lymphatic glands showed that the mononuclear white cells were most numerous in the swollen lymphatic glands; sections from the lymphatic glands showed appearances favoring this conclusion. There was consequently a lymphemia, the youthful forms of leucocytes predominating; hence the proliferation of white cells must be very active and their passing from the seat of formation into the circulation must ensue rapidly. This corresponds to the acuteness of the clinical picture. In chronic leukemia this passage into the circulation takes longer time and the lymphocytes have a chance to undergo transformation into

[1] Deutsche med. Wochenschrift, 1895, Nos. 39 to 43, and No. 45.

cells with granulations in their interior and to form polynuclear elements. The latter forms are actually and relatively diminished in number in acute leukemia; the conditions necessary for the transformation of their early stages of development — the youthful lymphocytes — are not present or have been disturbed.

In all probability the etiologic factors are identical in the acute as well as in the chronic forms of leukemia. Transition forms between the acute and the chronic varieties have been described by reliable observers.

The course of acute leukemia points to its being an infectious disease. In two of FRAENKEL's cases the complete absence of bacteria in the blood was fully demonstrated. The question as to an autointoxication from the gastro-intestinal tract is an open one. The early and constant swelling of the cervical lymphatic glands points to the possibility that the virus may enter from the mouth or from the pharyngeal cavity.

Two of FRAENKEL's cases are noteworthy on account of the manner of their termination, namely, a rapid and constant subsidence of all leukemic manifestations up to the very moment of death. This occurred under the influence of an intercurrent bacterial infection, a septicemia due to staphylococci, and colon bacilli respectively. Disintegration of the leucocytes in the blood and in their seats of formation occurred in these two cases as shown by the appearance of the blood and of the glands, and this was accompanied with a rapid exacerbation of the general condition which led to the belief that a ferment intoxication was taking place; in one of these cases there was also a marked increase in the excretion of uric acid. The disintegration of the white cells must consequently be of essential influence upon the amount of uric acid excretion.

These latter phenomena that occurred apparently as a direct consequence of the bacterial infection leads FRAENKEL to direct attention to the possibility of a rational therapy: The treatment of leukemia with bacterial products or with other substances that exercise a formative stimulus upon the blood-forming organs and favor the normal transformation of the young leucocytic cell forms into polynuclear leucocytes.

MORAL INSANITY.

Recently a very reputable medical man was convicted of a heinous crime and sentenced to prison for life. In the effort to collect facts to be used in securing pardon, the counsel discovered a most unusual life of hypocrisy. He had been cruel and harsh from boyhood. He enjoyed causing pain and suffering in others, and as a student he fairly reveled in the agony of animals in vivisections, and the pain of persons diseased. To this was added great egotism and love of personal praise. He ruined his father's property in apparent speculation. He was a bitter enemy to his brothers and sisters, and was indirectly the cause of the death of his wife, and drove his children from home. He was not miserly but was, in his inner life, thoroughly dishonest, and without the slightest conception of honor or duty to others. Yet he kept up a fair exterior, was a teacher in a medical college, with a large practice, and had no popular vices such as drinking or gambling. The more his history was studied the worse it appeared. Deception, fraud and dishonesty marked every stage, and yet it was largely purposeless and without reasonable motive.

The facts taken together had only one conclusion and that was moral insanity. Some condition of the brain was literally deranged and malformed. Some central part that had not developed had been steadily retrograding. However difficult it may be to explain and make clear this term, there are classes of facts that can be described by no other name.

The common expressions, vice, wickedness and depravity, used in the moral sense, become more and more confusing with each advance of science, and their use in any technical way is unfortunate for accuracy. The higher governing centers of the brain are clearly distinct from the lower, and what is moral, meaning the consciousness of duty and obligation to others, and conceptions of right and wrong, is clearly a later development. Evidently these centers are governed by the same laws which work in harmony in the healthy person, but may diverge greatly in other conditions. The belief that these centers may be undeveloped and diseased is along the line and sustained by both the physiologic and psychologic laws of existence and growth.

The legal fear that the recognition of this disorder will be an excuse for crime is purely theoretical and visionary.

The greatest danger comes from the want of recognition of the actual physical states which are manifest in criminal immoral conduct, conduct that may not come under legal recognition, but is nevertheless disease and wide departure from the normal standard.

Every physician comes in contact with persons who show by their acts insanity of every element that enters into the higher mentality. The terms commonly used to describe this condition should pass out of all accurate language.

Medical men should study the facts of these cases, confident that they will all be found to come under some general law of disease and degeneration.

Had the actual physical condition of this doctor been known, the disaster of his life and the suffering of others might have been averted. Arguments over definitions and terms are absurd, the reality of moral insanity can be proven from facts which have no other meaning.

THE MEDICAL EXAMINERS' BILL IN THE NEW YORK STATE LEGISLATURE.

Another and very serious attempt is being made in the New York Legislature to secure the abolition of the office of coroner, by a bill that will create a system of medical examination that will in large measure be divorced from politics. The medical examiners will be bona fide medico-legal officers, since they are to be appointed by the Appellate Divisions of the Supreme Court in each of the four Appellate Districts of the State. The number of examiners has not yet been settled definitely.

The medical examiners must be physicians of good standing, fulfilling the requirements which the Appellate Divisions of the Supreme Court are authorized to establish. They are required to give bonds for the proper performance of their duties, and are removable by the appointing power. Several of the Appellate Judges have been consulted about the placing of the appointing power in that branch of the State government, and they are in favor of it, for the reason, chiefly, that the new officers will be as far as possible removed from political influences. Their salaries will be fixed by the Court in proportion to the amount of work required of them in their several districts. Their term of office will be six years.

The medical examiners and assistant medical examiners shall be duly licensed and registered physicians, and their appointment shall be made according to merit and fitness, to be ascertained, so far as practicable, by such examinations as the Appellate Divisions for each department shall prescribe.

In case of the death, resignation or removal of any medical examiner, or assistant medical examiner, in the district of the Appellate Judges who appointed him, the same division may appoint his successor for the full term of six years. Any medical examiner, or assistant medical examiner, may be removed at any time for cause shown by the Appellate Division of the judicial department which appointed him.

Each medical examiner and each assistant medical examiner shall give bonds for $5,000, conditioned on the faithful performance of their duties.

Coroners' juries are abolished, because they are only training schools for witnesses, and because their findings have no force whatever.

CORRESPONDENCE.

A Permanent Badge for the American Medical Association.

DETROIT, MICH., March 6, 1896.

To the Editor:—I have been very much interested in the discussion on the subject of insignia of the medical department U. S. A. Now that the board of officers, of which Col. Chas. H. Alden, Assistant Surgeon General U. S. A., is president, has concluded its labors and rendered its report and recommendation to the Surgeon General, it may not be amiss to consider the subject of a permanent badge for the AMERICAN MEDICAL ASSOCIATION.

At each annual meeting of the ASSOCIATION we are presented with a new badge. At San Francisco the badge consisted of an escutcheon bearing the arms of California, etc. The escutcheon, which was made of silver, was suspended from a pin made in the semblance of a bear, composed of some kind of metal coated with gold. It was a beautiful badge, and cost the local medical societies and those who contributed to it quite a large sum of money. Sometimes we are decorated with a badge that would do credit to a firemen's parade. Now, if we had a permanent badge that could be worn by members of the ASSOCIATION at all times, it would serve as a method of recognition at the annual meetings, or whenever two members of the ASSOCIATION should meet by chance.

The best form of badge would probably be a button worn in the lapel. At the annual meetings a ribbon could be suspended from it, bearing the name of the State represented by the delegate.

I have considered a number of designs for such a badge, among them, the red cross of the Geneva Convention on a white field and surrounded by a narrow band of blue. This would be an appropriate design, red, white and blue. By referring to the paper of Col. R. French Stone, Surgeon General Indiana National Guard, entitled "Proposed International Medical Insignia," which was published in the JOURNAL, February 29, the outline of design referred to will be seen on page 405; Col. Stone suggested this emblem for use not only by the army but by the doctors in civil life throughout the world. He recommended a dark green field with a modified form of the red Maltese cross surrounded by a narrow strip of gold. His suggestion may be more appropriate than mine, but I do not think the contrast between the red cross and the dark green field is as marked as that between the white, red and blue which I have recommended.

The object of my communication, however, is to excite interest in the subject of a permanent badge for the AMERICAN MEDICAL ASSOCIATION, leaving the design to be considered afterward, first finding out whether a permanent badge of the ASSOCIATION is desired or not.

In conversation with several prominent members of the ASSOCIATION, at different times, I have broached the subject of a permanent badge, and the suggestion has been viewed with so much favor that I feel justified in presenting the matter more generally to the ASSOCIATION through the columns of the JOURNAL. I would be glad to receive any communication on the subject from members of the ASSOCIATION. Address communications to 106 Charlotte Avenue, Detroit, Mich.

F. E. STEWART, M.D.

The Use of Proto-Nuclein.

GOSHEN, IND., March 7, 1896.

To the Editor:—I am much obliged to you for the space you were kind enough to give my article on proto-nuclein and a case treated with that medicine alone. I am still prescribing proto-nuclein in my daily practice, with increased confidence. I am free to state I have had more satisfactory results from this medicine than from any one remedy I have ever prescribed, except, perhaps quinin in malaria. Having had quite a long experience in the practice of medicine, I trust I am not entirely deceived. Allow me briefly to note a case.

Early in the morning of October 15, last, I was called to attend a Mrs. S., aged 30, residing in this city. I learned she was taken violently sick in the night, six hours before I saw her. Had chills, very high fever, temperature 104, pain and sore throat. On examination I found the right tonsil entirely covered with a thick diphtheritic membrane. About 2 o'clock in the afternoon the exudation made its appearance on the left tonsil, extending back to the fauces and posterior nares. The

patient had a hoarse cough and smothering sensation, indicating that the disease was extending to larynx and trachea. As local treatment, using the powder blower, I covered the diseased parts with proto-nuclein special every four hours, blowing the same up the nostrils, and having patient inhale the dust as much as possible. For internal treatment, three grain doses of proto-nuclein powder were given every three hours, and continued for six days. The effect of this treatment was to check and hold the disease from the very beginning. On the second day the membrane began to loosen and thin out, and by the evening of the third day it had entirely disappeared. Two days later flakes of membrane were raised from the larynx and trachea, which had evidently formed on the first day. No other medicine, whatever, was given, except a dose of morphin at night. This patient made a delightful recovery, free from the weak and poisoned condition that follows even a mild diphtheria. And this is the *beauty* of the proto-nuclein treatment, convalescents invariably come out bright and fresh, free from defective secretions and poisoned blood.

In this locality the past season, almost every malignant diphtheria has extended to the larynx and trachea and those cases have been invariably fatal—such, no doubt, would have been the result in this case, only for the prompt arrest. I never saw a more violent attack. There were three persons exposed, mother, husband and little son. As preventive they were all given the same internal treatment, the main patient was taking. The husband had a very mild diphtheria, which required a couple of local treatments. The other two escaped entirely.

Respectfully, A. C. JACKSON.

A New Picture Process.

DES MOINES, IOWA, March 9, 1896.

To the Editor:—I have taken considerable interest in the published reports of the penetration of Roentgen's X rays and the application of the discovery to surgery; as well as to reports of similar results without the use of Crookes tubes. By virtue of accident I can report similar result independent of Crookes tube, dynamo, or any other agent of electrical light or force, so far as I know. Some months ago I placed a piece of sensitized paper in a book and it was forgotten. When discovered a few days ago, the page of the book was clearly and legibly printed upon the sensitized paper, as a positive. The discovery was so bewildering that I did not think of fixing it at the time, but next morning, when I went to do so, the image had vanished, and I lost the evidence of what I saw. The experiment, however, can be repeated by any one. If the impression had been from ink or oil it would not have faded.

A. G. FIELD, M.D.

PUBLIC HEALTH.

Effect of Water on Diphtheria Germs.—Demetria has been experimenting on the Löffler bacillus to determine whether it retains its virulence in water. (*Arch. de Méd. exp.*) He found that it rapidly loses its primitive virulence in distilled water as well as in sterilized, and also in running water, but that it promptly regains it when transplanted to a favorable soil. Fresh, running water seems most destructive to the bacilli, as they disappear in it in seven to nine days.—*Revista de Ciencias Modernas*, February 5.

An Infectious Disease Hospital to be Located on Manhattan Island.—There has been introduced into the legislature a bill authorizing the mayor and aldermen of New York city to convey to the Diphtheria and Scarlet Fever Hospital a site at East Seventeenth Street and the East River. This is the hospital which is to be built and managed by Mrs. Minturn and a number of other spirited ladies of New York city. The location is isolated and there has been no objection to the bill because it would endanger public health. There is now no hospital on Manhattan Island which will receive persons stricken with diphtheria or scarlet fever, and they must be bundled off to the Pest Hospital on Randall's Island. The proposed hospital is to fill that want, and the bill will pass.

Vulpine Rabies in Russia.—The *Sanitary Record* refers to the fine paternal care displayed by the Russian government on behalf of the unfortunates who fall victims to the bite of the wolf. It says: "The following is the record of the Pasteur Institute in Paris for 1894: 1,387 patients were treated, 7 of whom died. When Pasteur made his anti-rabic discovery he was besieged by men from Russia, some of whom had been bitten by wolves. Many of them could reach Paris only when too late, and the Czar at once, on being convinced of the efficacy of the treatment, sent pupils to be trained, and established centers of cure in Russia that have obviated the necessity of the long journey, so that during the year but one patient came from Russia, while 128 came from near-by England."

New York State Board of Health.—At a meeting of this Board held February 28, Dr. Lewis, chairman, presented a report on the sanitary program for 1896 in the State. He also submitted a report on the condition of the rendering works on Barren Island. He recommended that the services of the present inspector, Arthur Hollick, be dispensed with after April 1, and that Orville Lewis, of Brooklyn, be appointed in his stead. Orville Lewis is a relative of Dr. Lewis. The salary is $5,000 a year. Dr. F. O'Donohue, chairman of the standing commission on tuberculosis, reported that 527 animals suffering from the disease had been killed since July 15, 1895. The appropriation for the work, $30,000, he said, was not enough. After the meeting a conference was held with the New York City Board of Health, at which it was agreed to petition the legislature for a larger appropriation in order to deal effectually with tuberculosis.

Opposition, on Sanitary Grounds, to the Ringing of Church Bells at Untimely Hours.—Commissioner Dr. Emery, of the Brooklyn Department of Health, having been in the receipt of many complaints of citizens regarding the very early or very prolonged ringing of church bells, he caused to be issued, on February 14, the following note of warning, from the point of view of injury to health to invalids and others resident near churches possessing large bells:

"Notice to the Governing Authorities of Places of Religious Worship Owning and Using Large Bells:—Whereas, frequent complaints have been made to this department against the ringing of church bells at hours, and for prolonged periods, in such manner that it is alleged to be injurious to the health of invalids and others living in the neighborhood of the churches owning such bells, it is incumbent upon me to advise you that section 177 of the sanitary ordinances expressly prohibits the ringing of large bells in such manner as to become a prejudice or peril to the life or health of any human being. All church authorities and others having control over the ringing of large bells in neighborhoods that are thickly settled are hereby requested to prevent the bell ringing before 7 A. M., and in localities where complaints by invalids are brought to their notice, to restrict the bell ringing in the day time to as few strokes as possible."

A Good Way to Get Bad Statistics.—The January *Bulletin* of the Connecticut State Board of Health contains a kind of despairing comment by the secretary, Dr. C. A. Lindsley, on the poor annual vital statistic abstracts that he has to labor over in order to get out his own annual report. The annual abstracts are made up by the town clerks of the various towns, and they are required by law to be sent to the superintendent of registration on or before January 25, in each year. This document is still wanting from three towns. Of the 165 annual abstracts received, 77 have been returned to be corrected, and 12 have been returned the second time. It is quite obvious that any attempt to tabulate the numerous facts in a consolidated form will be blocked effectually, until the numerical

errors in the abstracts are corrected. For instance, if in one table it is stated that there were 9 deaths in May, and in another table that 10 deaths occurred in May, the discrepancy must be removed before the condensed tabulation can proceed. The explanation of these seemingly careless, troublesome and vexatious mistakes is found in the inexperience of town clerks as statisticians. But these many arithmetical mistakes are also indications of still other errors, of which the superintendent has no means of detection. It can not be doubted that in so complicated a matter as summarizing, classifying and tabulating the vital statistics of the population of the State of Connecticut, we have adopted about the worst method that would be thought of. A plan which involves the tabulation of all the original certificates of births, marriages and deaths in the whole State in 168 separate parcels, by as many different persons, nearly all of whom are unfamiliar with such work, does not commend itself to any statistician or promise very accurate results.

Sanitary Considerations Affecting the Tall Office Building.—A writer in the *Independent* makes an estimate that the value of the land upon which one of the tall "sky-scrapers" on Broadway, New York city, rests will be at the rate of $8,000,000 per acre. This explains the development of the huge structures in our cities, and it also explains that financial considerations have outmatched and overmatched those that pertain to health. The writer remarks, first, upon the elements of risk to life by fire, and says: "Considerations of hygiene, esthetics, of the personal rights of others, and of public morals, not being actively represented by anybody, come up slowly and rather feebly. Thus it is already manifest, although nobody is more than mildly impressed by the fact, that the tall office building which New York has rushed of late years into constructing, has risks and problems not yet fully measured. The fire hazard is one of the most serious, and there is no guaranty that the earthquake may not yet be another. Grant that the insufficiency of water pressure is offset by the slow-burning construction, we know that granite and marble are almost as wax in a fierce heat, nothing enduring like brick; the steel skeleton, with its veneer of stone bolted to it, is not so bad as the iron front, but how it will behave under the blast of a great fire is yet to be ascertained. The tall building has also converted the streets, especially the narrow ones, into the likeness of clefts or canyons, through which wind currents rush with exaggerated power. More serious still is the cutting off of daylight from lower floors and from the streets themselves, the sun never more than just visiting them for a few moments, and not doing even that in all places. Viewed from a high point, downtown no longer has streets—there are merely clefts or crevices in the pile of walls. The effect to the eye is startling and suggestive; the consequences, more or less serious, must be in several ways injurious. What is to be done about it? There has been some discussion, and a bill is now before the legislature which proposes to make fifteen times the square root of the street width the limit of height of buildings hereafter to be erected; on a 100-foot street this would make the limit 150. Opposition has appeared already; yet it is plain that if the apparent commercial demand does not continue to prompt the erection of 'sky-scrapers' restriction will not interfere with anybody, and that if this demand does continue restriction of some sort is necessary. In the social state, one can not do quite as he pleases with his own."

The Campaign Against Tubercular Dust.—Dust is becoming as much of a bugbear to the medical profession as it ever was to a model New England housekeeper. A vigorous campaign has recently been inaugurated against dust in hospitals. All angles are tabooed. The walls must have rounded corners where they meet, and where they join the floor and ceiling. The floor should slope to an opening, so that it can be washed with abundance of water or antiseptic solutions. All the furniture should be of iron, with no ornaments or projections of any kind. No dry sweeping is allowed now. Damp sawdust or something of the kind must be used, and damp cloths to dust the walls and furniture daily. Water should be kept in the cuspidors to prevent the drying of sputa, and the contents carefully burnt. All the water used for drinking and washing hands, instruments, and wounds, should be sterilized. Tarnier has had smooth, sloping, roof-canopies placed over all the old-fashioned furniture, wardrobes, etc., in his hospital in Paris, to collect the dust until it can be washed off. Contagion from tuberculosis in hospitals is just now causing much discussion, and a more vigorous hygiene would be a most efficient aid in settling the question.

The use of sanitary spit mugs in all wards where consumptives are treated, has become a necessity. These are made of thick heavy paper and kept in a frame, from which they are daily removed and burned. This form of spit mug has been used in the U. S. Marine-Hospital service for the past six years.

In the *Medical Press and Circular* for February 19, the Paris correspondent quotes the following statement by Dr. M. Terrier, physician to the Hospital Bichat, that a heavy mortality by tuberculosis has occurred among hospital nurses and attendants. Dr. Terrier says:

"The contagiousness of tuberculosis is a question of capital importance in hospital practice. In many hospitals the phthisical are freely mixed with other patients. I consider tuberculosis extremely contagious. Mathematical proof of this fact can not be given from observation of hospital patients since the disease does not declare itself until after discharge from the hospital, but ample proof is afforded among hospital nurses and attendants at consumption hospitals. Out of twenty-five male and female nurses of the Hôpital Bichat who died in the service, no less than twenty perished of tuberculosis. The contagiousness is further proved by the number of pupils and house surgeons who develop the disease; and it always manifests itself most among those who work hardest and remain longest in hospital. The laboratories have afforded striking evidence; and M. Francois-Franck records the cases of two pupils affected after experimenting with dessicated tuberculous products. There can be no doubt that the dust of apartments where tuberculous patients remain becomes charged with bacilli. Suspected cases should be isolated, and in order to determine the question, an injection of tuberculin ought to be administered. It is only in this way that the dangers of contagion in hospital can be guarded against."

The Vile Yard-vault, or "Midden" still Supreme.—Dr. Francis Vacher, Health officer for Birkenhead, England, in a recent address on the prevention of epidemics urged upon his fellow officers to do their utmost for the *rapid* removal of decomposing animal refuse, as opposed to the primitive and filthy storage of much of it in the back yards of inhabited premises. His remarks are reported in *Public Health* for November. In his opinion, the sanitary needs of the case are hardly met if there is not a daily removal of human excreta. He said:

"From a sanitary point of view, decomposing refuse is of three kinds—1, human excreta; 2, house refuse, and 3, trade refuse. Will anyone assert that the ordinary way of dealing with this material secures its rapid removal? Commonly, the first two kinds are hoarded up in middensteads, in close proximity to inhabited houses; and the third is deposited on waste land, or turned into a running stream. Much, doubtless, has been done of late to induce manufacturers to use or consume their decomposable waste, and much is still being done. But as for the ubiquitous midden, it is yet supreme. Sanitary authorities rarely attempt its abolition, dissipating their strength in projects for its improvement. It is to be made smaller and shallower, is to be cemented over, and roofed and ventilated, etc. Certainly, you may make it less offensive in this manner, but storing decomposable stuff is an insanitary practice *per se*, and therefore any receptacle for its storage is bad; and improvements, making it a little more tolerable, continue it in existence from year to year. Some recently altered middens are scarcely more tolerable than the most primitive. There are districts where these receptacles are being divided, converting each compound-midden into a midden and cess-pool; and other districts where pails (to be emptied weekly) have been placed under the seats. I can find no smooth word for the

midden, no excuse for those who are content with it. In all its pristine foulness, it is execrable; and, as metamorphosed and modified in various ways, it is yet altogether abominable. Wherever it exists, conditions are present which assist in the spread of many diseases, epidemic and endemic. Where it nestles in the narrow yard of each little dwelling in the poor quarter of a town, who can wonder that the visits of such disease are frequent, and their stay prolonged?

"When the invited epidemic comes, attempts are made to discover the cause. It is ascribed to 'the usually neglected condition of the middens,' 'defective construction of the middens,' 'foul water in the middens,' 'overflowing middens,' etc. And what is implied, if not expressly stated, is, that were the middens altered somewhat, or the scavenging improved, all would be right. So the middens are altered, and the scavenging improved. However, when the next outbreak of disease occurs, it spreads. All was *not* right, and never will be, as long as the middens remain. Much of this does not apply to rural districts. Certainly, the daily collection and burning of refuse would not ordinarily be necessary in country places, but checking the practice of hoarding decomposing refuse in contiguity to dwelling-houses is necessary, and can be effected. A compound-midden here and there in the country will not be powerful for harm like long rows of them in crowded towns; but a compound-midden is an odious thing wherever it exists, and should not be tolerated by any sanitary authority."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Ohio: Dayton, February 27 to March 5, 2 deaths.

Michigan: Detroit, March 1 to 7, 2 cases, 1 death; Imlay Township, Ionia, Riga Township and Saginaw, smallpox reported February 22 to 29.

Louisiana: New Orleans February 22 to 29, 53 cases, 2 deaths; Shreeveport, March 7, 2 cases.

New York: Brooklyn, January 1 to 31, 1 death.

Texas: El Paso, March 4, 1 case.

SMALLPOX—FOREIGN.

Dublin, February 15 to 22, 1 case.
Buda-Pesth, February 5 to 12, 5 cases.
Calcutta, January 18 to 25, 1 death.
Cardiff, February 15 to 22, 4 cases.
Corunna, February 1 to 22, 2 deaths.
Genoa, February 8 to 15, 3 cases, 1 death.
London, Eng., February 1 to 8, 64 cases.
Moscow, February 8 to 15, 1 case.
Naples, February 7 to 14, 29 cases, 9 deaths.
Odessa, February 8 to 15, 1 case, 2 deaths.
Prague, February 8 to 15, 5 cases.
Swansea, February 15 to 22, 2 cases.
Tuxpan, February 15 to 22, 3 deaths.
Warsaw, February 8 to 15, 3 deaths.

CHOLERA—FOREIGN.

Bombay, January 28 to February 4, 1 death.
Calcutta, January 18 to 25, 45 deaths.
St. Petersburg, February 8 to 15, 1 case, 1 death.
Japan: Chiba Ken, February 3 to 11, 7 cases.

ASSOCIATION NEWS.

Section on Surgery and Anatomy.

SOUTH BETHLEHEM, PA., Feb. 27, 1896.

To the Editor:—We have been fortunate in securing the promise of papers on the special subject for discussion, *i. e.*, "The Surgery of the Cerebro-spinal Axis and Its Bony Encasement," from representative surgeons throughout the country. It is now desirable to have the program completed as soon as possible. Permit me through the medium of the JOURNAL to request all members who desire to present papers on the special subject, or any other branch of surgery, to notify me or the chairman of the Surgical Section, Dr. C. A. Wheaton, St. Paul, as soon as possible. In every case the title of the paper should accompany the request for place on the program.

W. L. ESTES,
Secretary Surgical Section.

Local Committee of Arrangements.—The Local Committee of Arrangements for the Atlanta meeting consists of the following: Chairman, W. F. Westmoreland; Vice-chairman, W. S. Elkin; Secretary, J. McF. Gaston, Jr.; Treasurer, Louis H. Jones. L. B. Grandy, George H. Noble, J. M. Crawford, W. P. Nicolson, A. W. Calhoun, L. P. Stephens, W. L. Champion, Bernard Wolf, C. D. Hunt, B. W. Bizzell, R. R. Kime, W. C. Jarnagin, R. B. Ridley, L. Amster, L. A. Felder, J. C. Olmstead, W. S. Kendrick, J. S. Todd, Hugh Hagan, V. O. Hardon.

SUBCOMMITTEES.

Committee on Ways and Means.—Geo. H. Noble, Chairman, W. C. Jarnagin, C. D. Hunt, R. R. Kime, L. Amster, L. B. Grandy, J. M. Crawford.

Committee on Entertainment.—W. S. Elkin, Chairman, W. P. Nicolson, B. W. Bizzell, R. B. Ridley, A. W. Calhoun.

Committee on Registration.—J. McF. Gaston, Jr., Chairman, L. P. Stephens, L. A. Felder.

Committee on Reception.—Hugh Hagan, Chairman. V. O. Hardon, J. S. Todd, Bernard Wolf.

Committee on Exhibits.—Louis Jones, Chairman. W. S. Kendrick, J. C. Olmstead, W. L. Champion.

SOCIETY NEWS.

The Tippecanoe County (Ind.) Medical Society at its last meeting elected the following officers: President, Dr. R. S. Tea; Vice-President, Dr. B. Wetherill; Secretary, Dr. Geo. F. Keiper; Treasurer, Dr. Geo. F. Beasley; Censors, Drs. G. K. Throckmorton, W. R. Moffit, E. C. Davidson. The laboratories of Purdue University are thrown open to the profession. In the last six weeks Dr. Bitting, of the University, has lectures on experiments with tuberculin on cattle, and Professor Burrage, the sanitarian, on typhoid fever. On March 16, Professor Duff will demonstrate the cathode rays to the society. The society is enjoying a prosperous year. Meetings on the first and third Mondays.

New York State Medical Association.—The following letter has been issued:

TROY, N. Y., Feb. 29, 1896.

Dear Doctor:—The Twelfth Volume of our Transactions is nearly completed, and will be distributed in the near future. It is fully equal to any of its predecessors. To those who were not at the annual meeting, and have not paid dues, I enclose bill for the same.

The AMERICAN MEDICAL ASSOCIATION will meet this year at Atlanta, Ga., on May 5–8. Those who wish to attend should notify me at once, that I may send credentials. To those who do not intend to go to the meeting, and who have not yet joined the AMERICAN MEDICAL ASSOCIATION, I wish to call their attention to the fact that they can join the National Organization at any time. The improved and enlarged JOURNAL OF THE ASSOCIATION is now well worth the annual fee of five dollars. Blanks for application can be obtained of me. I hope our membership in the national body will be materially increased this year.

I wish also at this time to request each one intending to read a paper at our Annual Meeting in October to send the title at an early date to me, or to the chairman of the Committee of Arrangements, Dr. J. G. Truax, 17 E. 127th Street, New York City.

Our meetings can only be made as successful as we could wish by personal attendance, securing the attendance of others and contributions to the scientific work. I bespeak your active interest in our Thirteenth Annual Meeting.

Sincerely,
E. D. FERGUSON, Sec'y and Treas.

Third International Congress of Dermatology to be held in London, August 4 to 8, 1896. Tuesday, August 4, preliminary business. Presidential address. "Prurigo," Dr. Besnier, Paris; Dr. J. C. White, Boston; Prof. Kaposi, Vienna; Dr. Payne, London.

Wednesday, August 5. Clinical demonstration of cases. "The Etiology and Varieties of Keratosis," Dr. Unna, Hamburg; Prof. V. Mibelli, Parma; Dr. H. G. Brooke, Manchester; Dr. W. Dubreuilh, Bordeaux. "Syphilitic Re-infection."

Prof. Fournier, Paris; Mr. Alfred Cooper, London: Prof. Lang, Vienna; Dr. Fitzgibbon, Dublin.

Thursday, August 6. Clinical demonstration of cases. "The Connection of Tuberculosis with Diseases of the Skin other than Lupus Vulgaris," Dr. J. Nevins Hyde, Chicago; Dr. Radcliffe Crocker, London; Dr. Hallopeau, Paris; Dr. J. Riehl, Vienna. "The Duration of the Period of Contagion of Syphilis," Mr. Hutchinson, London; Prof. Lassar, Berlin; Prof. Campana, Rome; Dr. Fuelard, Paris. "Ringworm and the Tricophytons," Dr. Sabouraud, Paris; Prof. Rosenbach, Göttingen; Mr. Malcolm Morris, London. Many contributions to this debate promised.

Friday, August 7. Clinical demonstration of cases. "The Nature and Relations of the Erythema Multiform Group," Prof. De Amicis, Naples; Dr. P. A. Morrow, New York; Dr. T. H. Veiel, Stuttgart; Dr. Stephen Mackenzie, London. "Malignant Syphilis," Prof. Handlung, Copenhagen; Prof. Neisser, Breslau; Prof. Tarnovsky, St. Petersburg.

Saturday, August 8. Clinical demonstration of cases, followed by papers.

NOTE. The Congress has been fortunate enough to secure for its use the building known as Examination Hall, on the Victoria Embankment. This will afford every facility for all kinds of demonstrations, cases, pictures, museum, etc. Special efforts are being made to have large demonstrations of cases, and all who have been in London know how rich is the material there. It is of the greatest importance that those intending to join the Congress should notify the Secretary, Dr. J. J. Pringle, 23 Lower Seymour Street, London, W., of their intention as soon as possible. The membership fee is $5, which should be sent in the form of a one pound sterling draft on London, or P. O. order to the same amount.

GEO. THOS. JACKSON, 14 East 31st St., New York.
Secretary for the United States.

The Medico-Legal Society of Chicago.—A regular meeting was held in Handel Hall, March 7, 1896, with the President, DR. E. J. DOERING, in the chair.

DR. D. R. BROWER, chairman of the committee appointed to present resolutions on the papers presented at the last meeting on "The Habitual Criminal," made the following report, which was adopted:

Mr. President and Members of the Chicago Medico-Legal Society:

Your committee, appointed to consider the papers and addresses presented at the last meeting of the Society on "The Habitual Criminal," after due consideration of these productions and a review of the subject generally, beg leave to submit the following report:

1. That crime is increasing. A comparison of the census of 1850 with the census of 1890, shows that the population has increased 170 per cent, and criminals 445 per cent.

2. As causes of this increase in crime we find vicious parentage and bad environments; as important contributing factors, intemperance, a constant increase in the urban population, unrestricted immigration, and the unreasonable manner in which laws are administered.

3. We regard the habitual criminal as an abnormal man, this abnormality manifesting itself 1, physically, by stigmata in cranial and cerebral development; by criminal physiognomy; by anomalies in the muscular, respiratory and cardiac circulatory systems; by anomalies in motor activity and in physical sensibility; and 2, psychically, by moral insensibility; by a lack of forethought; by a low grade of intelligence; by his vanity; by his emotional instability, and by his slang.

4. The proper treatment of the habitual criminal is a medico-legal question, and not purely a legal one. As a general proposition, the social and biologic conditions of the prisoner, and not the accident of the crime, should determine the degree and kind of punishment.

For the diminution of crime we suggest that there should be radical modifications in the laws. 1, marriage should be regulated. The marriage license, in addition to the present requirements, should demand evidence that both the parties are in good health; that they are not alcoholic nor narcotic inebriates; that they are not tuberculous, or epileptic; that they have not active venereal disease; that they are not sexual perverts; that they are not insane, criminals, nor paupers. 2, the courts should appoint suitable custodians for neglected children. 3, the pardoning power should be taken out of the hands of the governors of States and placed under the control of a Board of Pardons, who should be skilled in criminal anthropology. 4, in certain special cases asexualization may be indicated or, at least, is worthy of serious consideration. 5, there should be four classes of institutions in which criminals should undergo detention and treatment: Local jails for the retention of prisoners awaiting trial, in which segregation should be complete; reform schools for minor children; reformatories for older criminals who can be reformed; penitentiaries for the life-long incarceration of the incurables.

D. R. BROWER, M.D.,
JAMES BURRY, M.D.,
G. FRANK LYDSTON, M.D.,
Committee.

DR. G. FRANK LYDSTON contributed a paper entitled "A Discussion of some of the Fallacies of our Last Symposium."

The paper was freely discussed, after which the Society adjourned.

NECROLOGY.

HIRAM CORSON, M.D., of Plymouth Meeting, Pa., the oldest member of the AMERICAN MEDICAL ASSOCIATION, died March 4. He was born in Plymouth, Oct. 8, 1804 and was descended on the paternal side from the Huguenots, and on the maternal side from the Quaker Dickinsons of England. He was educated at Friends' schools at Plymouth Meeting and Philadelphia, and was graduated from the medical department of the University of Pennsylvania in the spring of 1828, at which time he settled in Plymouth Meeting. He was a member of the Philadelphia Medical Society; of the Montgomery County Medical Society, of which he was president in 1849; of the State Medical Association, of which he was president in 1852; and of the AMERICAN MEDICAL ASSOCIATION since 1847. He was elected a member of the Meigs and Mason Academy of Medicine in Ohio, in 1873; associate member of the Philadelphia Obstetric Society in 1874; and associate Fellow of the College of Physicians of Philadelphia in 1876. His contributions to medical literature include papers on "Epidemic Jaundice"; "Belladonna in Pertussis," and "Measles," also numerous papers addressed to the State Society on "Ice in Scarlet Fever and Diphtheria, Externally and Internally," (a treatment of which he was the originator); on "Food for Infants;" on "Erysipelas following Vaccination;" on "Midwifery in the Country," and many other subjects, beside various contributions to medical journals.

SMITH ELY, M.D., for many years a leading physician and surgeon in Newburgh, N. Y., died February 28, of heart disease, 68 years old. He studied medicine in New York and Woodstock, Vt., graduating from the Vermont Medical College in 1850. For a time he was one of the resident physicians at the Emigrants' Hospital, Ward's Island, and afterward made several voyages as surgeon on the steamer *Franklin*, between New York and Havre. He had been a director of the Highland National Bank since 1875.

JAMES WOODWARD ELLIOT, M.D., of New York city, died February 28. He was 72 years old, was born in England and came to this country with his father's family when quite young. He was graduated in 1850 from the New York College of Physicians and Surgeons. Only two members of his class are now alive. He began his practice in old Greenwich Village, at No. 11 Abingdon Square. There he conducted a general practice until thirteen years ago, when he moved to the house in Fourteenth Street, where he died. For twenty years he was connected with the City Mission, and superintendent of the Sunday school of St. Barnabas' chapel. He had been an enthusiastic member of the old New York Cricket Club on

Staten Island. He remained English in his sympathies all his life. He leaves two sons and one daughter.

WILLIAM J. PURCELL, M.D., of New York city, one of the oldest vaccinators in the public schools, and one who had held a place with the Bureau of Contagious Diseases since May, 1875, died on February 17. He was an alumnus of Bellevue Hospital Medical College, class of 1867. He was a member of the County Society and the Society for the Relief of Widows and Orphans of Medical Men, also of the Medico-Legal Society. He was a man of great geniality of disposition, and had a host of warm friends in and out of the profession.

HENRY H. HOUSE, M.D., postmaster of Rockland Lake, N. Y., and for years the only resident physician there, died February 21, from injuries received by being struck by an engine on the West Shore Railroad, at Congers. His skull was fractured and he remained unconscious until his death. Dr. House was about fifty-five years old, and was born in Ulster County. He received his medical diploma in 1863, at University Medical College, and had lived in Rockland Lake since 1874. He was prominently identified with many interests in the country, being a school trustee and health officer. He leaves a widow and two sons.

DAVID L. DAGGETT, M.D., died of pneumonia on February 23, at his residence, in New Haven, Conn. He was born June 24, 1820, in New Haven, where his father and grandfather were also born. The grandfather, Judge David Daggett, was mayor of the city, a senator of the United States, professor of law in Yale and judge of the superior court of Connecticut. Dr. Daggett graduated from Yale in 1839 and went to Virginia, where he taught school. He graduated from the Yale Medical School in 1843, and was assistant surgeon and surgeon at the Old Knight Hospital. He has been president of the New Haven and County Medical Associations, and a member of the State Medical Society. Dr. Daggett was married in 1848, to Margaret, daughter of Dr. Wilbur Gibbons, of Wilmington, Del. Mrs. Daggett died in 1865. He leaves three sons, David, Dr. W. G. and L. M. Daggett, all of New Haven.

ASHBEL W. BARROWS, M.D., of Hartford, Conn., who died early in January, 1896, was the medical director of the Phenix Life Insurance Company. He was born at Mansfield, in that State, in December, 1816. At the age of 21 he entered Yale Medical School, and graduated in 1841. He first practiced at Rocky Hill, and removed to Hartford in 1847, where he has since resided. He was one of the six original physicians of the Hartford Hospital, which was founded in 1857. He was a visiting physician until 1874. Since then, up to the time of his death, he was one of the consulting physicians. In 1851 he became connected with the Phenix Mutual Life Insurance Company as assistant medical examiner. In 1853 he was appointed medical director of the company, a position which he held until his death. He was a member of the State, County and City Medical Societies. Of the two former societies he was president at different times, and of the latter he had been vice-president for the past two years. He was an early member of the AMERICAN MEDICAL ASSOCIATION, having united therewith in 1853.

HERBERT JAMES SAUNDERS, M.D., of Kingston, Ontario, died February 16, in his fiftieth year. He had been ill for six weeks with septic pneumonia. Dr. Saunders held the chair of clinical medicine and dermatology in Queen's University Medical Department. He was a surgeon-major in the Canadian Militia, and was considered one of the ablest Canadian physicians. He held the degree of M.R.C.S.E., from the year 1870, as well as that of M.D., from the Queen's University. In the College of Physicians and Surgeons of Ontario, he was in 1892 and 1893 a member of the Board of Examiners, taking the subject of the Theory and Practice of Medicine.

WILLIAM O'MEAGHER, M.D., a New York city coroner, died February 24, after a rapidly progressive attack by pneumonia. Dr. O'Meagher was born in Ireland sixty-five years ago. He graduated in arts from Queen's College, Galway, Ireland, and graduated as a physician from the Medical Department of the University of New York in 1857. He served as a surgeon of the Sixty-ninth regiment for four and a half years during the civil war. He was a member of the Medico-Legal Society, the Harlem Medical and Chirurgical Society and the New York Academy of Medicine. At one time he was house surgeon and physician in St. Vincent's Hospital, a physician in the New York Dispensary and a health inspector of Richmond county and New York city. He leaves a daughter, Mrs. Eveline Donohue, and four grandchildren.

MISCELLANY.

Care of the Feeble Minded in Denmark.—The private establishments for this purpose in Denmark have received an allowance from the government until recently, when a law was passed to transform them into state institutions.

"A Cocada."—The Peruvian Indians have as a measure of distance the cocada, which means the ground a cargo-bearer can walk under the stimulus of one quid of this leaf—the impulse lasts from thirty to forty minutes, and a man can pass over three kilometers.

Wafers: Light and Red.—Man's faith in human knowledge is illustrated in the picture of the bald-headed physician prescribing for baldness in a patient. As long as the world lasts, people will trust in the power of medical science to restore lost tissue.

He Had Previously Complied.—The black-bearded pirate, with a knife between his teeth, boarded the passenger ship. "Throw up your hands!" he shouted. The passenger hanging over the rails smiled feebly: "I think I did, not less than an hour ago," he said gaspingly.

Pennsylvania Prohibits Exhibitions of Deformities.—An act was passed in Pennsylvania in 1895 making it unlawful, and affixing a heavy penalty for any person to exhibit in any public hall, museum, theater or any other building, tent, booth or public place for a pecuniary consideration or reward, any insane, idiotic or deformed person, or any imbecile.

Bacillus Pyocyaneus in Urine.—Le Noir reports a case of urinary calculi and pyelitis in a young man, in whose urine were found the bacillus pyocyaneus and the bacterium coli. Pyocyanin was extracted with chloroform from the bouillon in which the cultures of the bacillus pyocyaneus had been made.—*Gaz. Méd. de Paris*, February 1.

Draining Lake Texcoco.—We have received from the Department of the Interior of Mexico an interesting series of charts and diagrams in regard to the great enterprise of drying up Lake Texcoco, near the city of Mexico. The sewers of the city have drained into it from time immemorial, but the completion of the new canal and tunnel will empty it almost entirely of water, and reclaim the land for agriculture, which is considered an important sanitary measure.

Iron Stairways on Outside of Hospitals.—Taking effect Oct. 1, 1895, it is required by law in New York State that all hospital buildings used for general hospital purposes, or hospitals or asylums for the insane, or any hospital or buildings which are more than two stories high, other than those which are fireproof in their construction shall have properly constructed iron stairways on the outside thereof, with suitable doorways leading thereto from each story above the first, for use in case of fire.

Large Bequest to a Philadelphia Hospital.—The will of the late Mrs. Anna R. Aspinwall, of Pittsburg, Pa., who died in Edinburgh, Scotland, last December, leaves her entire estate, estimated to be worth from $1,000,000 to $3,000,000, to the Hospital

of the Protestant Episcopal Church, Philadelphia. This hospital is maintained for the benefit of white female sick or convalescent orphan children. The will stipulates that there shall be no denominational discrimination, and asks that preference be given to children who have lost both parents. A contest of the will is threatened, but the presumption in favor of its validity is said to be very strong.

Anti-venom Serum.—Animals inoculated with Calmette's anti-venom serum, and then exposed to be bitten by venomous serpents, are found to be immune. Until recently no experiments had been made on human beings, but Dr. Lépinay, of Saigon, reports a life saved with it. An Annamite who had been bitten by a *naja tripudians* was inoculated with the Calmette serum an hour afterward, and recovered. Calmette is at the head of the Pasteur Institute at Lille.—*Nord Médical*, February 1.

Tetanus Accompanied by Exophthalmic Goitre.—Steinlechner describes in a Vienna exchange a case of tetanus and Basedow's disease in a young woman, beginning with painful cramps in the extremities. Tracheotomy was performed to prevent death from suffocation, and death followed from an intercurrent purulent bronchitis, about a year after first symptoms developed. The necropsy disclosed exophthalmic goitre with dilatation of the heart, bronchial and pulmonary lesions, and also acute gastritis and enteritis, with an acute hemorrhagic nephritis.—*Gaz. degli Osp. e Clin.*, January 28.

The Charity Club Hospital of Boston.—The building, located on the top of Parker Hill, Roxbury, has a fine outlook and an abundant areation. It is in the charge of Dr. Elizabeth T. Gray, a graduate of the Woman's Medical College of the New York Infirmary, and her assistant superintendent. Beside these, the staff consists of a housekeeper and corps of eight servants, a head-nurse and ten under-nurses, a staff of six prominent surgeons attend the operations, each on their allotted service. The hospital wards contain from twenty to twenty-five beds, usually all occupied. Dr. Gray has also a training school for nurses.

Formol as a Preservative of Laboratory Specimens.—The Société des Sciences Méd. de Lille devoted some time at a recent meeting to endorsing formol as a cheap and effective preservative of macroscopic pieces. It penetrates, hardens and preserves tissues without retraction, without staining or injuring instruments or any caustic effect on the skin. One to 100 is a strong enough solution for most specimens, but especially fragile ones can be put in a 2 to 4 per 100. A weak solution is especially valuable in preserving urine. It also prevents the transformation of urea into ammonium carbonate, and the only disadvantage it has is that it turns blood a grayish color.—*Nord Médical*, February 1.

Improved Preventive.—Weisel presented an article at a recent meeting of the Medical Association at Prague, first remarking that since the Medical Congress at Amsterdam, when Drysdale first publicly announced that there were occasions when a physician was justified in supplying a patient with some means to prevent conception, many devices have been invented, but none have proved reliable except Mensinga's pessarium. Even this has the disadvantage that it can only be inserted by a physician. Weisel's invention is similar to this, but is made so simple and so strong that no skill is required to introduce it. It consists of a hollow rubber cone and rubber disc connected by a spring. The disc fits tight in the vagina, which it closes completely, without inconvenience of any kind. Waldek and Wagner, of Prague and Vienna, are the manufacturers.—*Wiener klin. Rundschau*, February 9.

"White Salt" in Congo-land.—According to the *Independent*, the following estimate of the value of salt in Central Africa, and especially in the interior of the Congo Free State, is derived from the letters of a medical man who has recently been traveling in Congo-land. He says that of all the white man's possessions, the one most coveted is "white salt," so called to distinguish it from the home product, which is a sort of black cinder-like substance, and so scarce as to cause much suffering. There are many parasitical diseases, both external and internal, caused by this lack. If a white man gives them a spoonful, it is most carefully divided, and if in the distribution there has been a miscount, the "overlooked" man will lick the palm of the hand in which the original treasure lay to secure the last grain. Some poorly informed person lately produced an article called, "Why salt?" in which he fancied he made out a case of man's going without salt. He had little physiologic knowledge and had never read how the entire deprivation of salt ruins animals.

Mastoiditis and Otitis.—Ucherman read a paper recently before the Congrès des Chir. du Nord on suppurating inflammations of the ear, in which he advocated prompt surgical intervention whenever the pain, edema and fever accompanying acute inflammation of the mastoid cavity and cells fail to yield to antiphlogistic and local treatment. 2, in chronic mastoiditis with repeated tumefactions, fistulas or abscesses. 3, in acute suppurative inflammation of the middle ear when fever keeps up after tympanum has been punctured. 4, in similar cases that have become chronic and are accompanied by fever when flow ceases. 5, in tumors of the connective tissue with caries of the apophysis, which it is impossible to reach and treat through the natural passages. 6, in chronic fetid otorrhea which will not yield to local treatment, especially if complicated with cerebral disturbances.—*La Province Médicale*, January 4.

Antitoxin in Bordeaux.—Bordeaux has reduced the annual death rate from diphtheria from 103.43 to 18 by its fine antitoxin service. A set of culture tubes, nickel spatula and circular of directions are given free to any physician who applies for them at any of the numerous sub-stations, when he has a case of suspected diphtheria. He makes the culture and sends the tubes to the central laboratory where they are examined by an expert. If diphtheria bacilli develops in the tubes the latter sends immediately, at the expense of the city, sufficient antitoxin for the physician to treat the case properly. Seven hundred and eighty-nine cultures were made last year, 389 of which proved to be diphtheria. In this way the antitoxin was not wasted, nor inflicted on any except those who actually required it. Five horses supply the serum.—*Bulletin Médical*, February 5.

Provision in New York as to Hydrophobia.—There was a law passed in New York in 1895 which provided that overseers of the poor, or other officers having charge of the dispensation of public charity in the several counties of the State should send to the Pasteur Institute in the city of New York all persons duly certified by regular physicians to have been bitten by rabid animals or otherwise put in danger of infection with rabies. The transportation of such persons, with necessary attendant or attendants, to and from the city of New York, shall be a charge upon the counties in which they reside. The sustenance, nursing and preventive treatment of such persons, for the time adjudged necessary, shall be provided by the Pasteur Institute. An appropriation of $6,000 was made to compensate the institute for the services named. It is also required to be at all times open to the inspection of the governor and of the State board of health or of the accredited representative of either, and it is to annually make a report to the legislature.

Lectures of Benjamin Rush.—Rush Medical College, Chicago, has recently come into possession of a volume of notes in the handwriting of a medical student who attended the lectures of Dr. Benjamin Rush in 1784. The volume, quite antique and dilapidated in appearance, contains 278 pages written in a clear hand, and presents a brief outline of the symptoms of disease

with the modes of treatment as conducted by the distinguished lecturer. Scribbled on several of the pages are various opinions, quotations and considerable matter irrelevant to the subjects of the lectures. Advice to students as regards to character, behavior, dignity, and avoidance of quackery, seems to have been as needful a century ago as now. A lecture is devoted to this subject. This interesting volume was for many years early in the century, the property of Dr. John K. Briggs, of Dedham, Mass., and was presented to Rush Medical College through Charles C. Hyde, Esq., by Dr. F. M. Briggs, of Boston.

Expert Opinions as to the Future. Every expert opinion as to the future, founded upon present conditions, is, and must necessarily be, uncertain; but the fact that it is so uncertain, the supreme court of the State of Washington holds, in the case of Mitchell vs. Tacoma Railway and Motor Co., decided Jan. 30, 1896, does not prevent the opinion of an expert being given as to the probable results.

Thyroid Treatment for Obesity and Stunted Growth. At the meeting of the Société de Biologie of January 18, Bourneville reported several cases of obesity and stunted growth in children treated with thyroid glands. The loss of flesh was rapid for a while, and then the treatment seemed to lose all efficacy, but the dwarfed children showed a marked increase in height under the influence of the thyroid treatment. He was induced to try the thyroid treatment by observing its effect on three cases of myxedematous idiocy.—*Gaz. Méd. de Paris*, February 1.

Evidence Admitted to Show Pain.—In an action brought to recover damages for personal injuries to feet, legs, side, back, spine and womb, by which it was alleged that the plaintiff became sick, very lame, diseased and disabled, and suffered great pain, the supreme court of Michigan holds that it was proper to admit her testimony as to pains in her head and stomach, not to prove injuries to the head and stomach, but as showing the pain suffered from the injury to other members. The court also holds, in the same case, Will vs. Village of Mendon, decided Feb. 7, 1896, that while the husband could not testify to a sensation experienced by the wife, he might testify to her complaints and statements as to the location, nature, and extent of her pain and suffering made at the time she was feeling the pain, and as to a numbness of her arm, as observed by him.

Abnormal Secretion of Sulphur in an Experiment on a Dog.—Smith Jerome writes to *Pflüger's Arch.*, No. LX, p. 233, describing some experiments with a dog, fed only with dog-biscuit and water, to whom he administered ethylsulphid and potassium carbaminthio-glycolate. With the former 66.5 of the total amount of sulphur was oxydized into sulphuric acid. After the potassium carbaminthio-glycolate was administered the total fell to 68.4 per cent., remained 66 per cent. for four days, and fell to 50 per cent. before the ethylsulphid was given again. It remained at this low figure during this period and for more than two months afterward, when calomel and jalap were administered causing it to rise to 70 per cent. The proportions between the total amounts of sulphur and nitrogen were altered in that the increase in the amount of sulphur was not only relative but absolute. It was all in the neutral form, however. Jerome queries whether the proportion of neutral to oxydized sulphur in the urine may not be less constant than we suppose, and suggests that the secretion of sulphur may serve as a means to determine the amount of albumin decomposed in the organism.—*Centralblatt für Phys.*, Oct. 5, 1895.

Wounds in Modern Warfare.—Professor Delorme read a paper on the wounds produced by modern firearms at close range, before the meeting of the Paris Acad. de Méd. of January 27, which concluded as follows: 1. The shock from the small bullets (Lebel), now eight millimeters instead of eleven, is not so great as it used to be from larger balls. 2. The holes through which the bullet enters and passes out are smaller, and the hemorrhage proportionately less. 3. Particles of clothing are usually carried with it into the wound, but they are eliminated with the pus, which they discolor. 4. The new bullets usually fly to pieces when they strike a wall or hard substance, and the flying fragments produce special injuries. Professor Delorme had peculiar facilities for studying this class of wounds, as he took charge of the injured at Fournies fifteen days after the affair. They were all struck by Lebel balls within a range of 100 meters. Eight were killed outright, but the other thirty-four wounded all recovered in spite of apparently desperate injuries. He closed by remarking that if the general health of the soldiers is carefully looked after, so that it will second the efforts of nature and the surgeon, modern warfare is not as destructive as is supposed.—*Bulletin Médical*, February 5.

Pennsylvania Physicians must Report Infectious Diseases. A law passed in Pennsylvania in 1895 provides that every physician located or practicing in any of the municipalities of that commonwealth, who shall know that any person whom he or she is called upon to visit, or who comes or is brought to him or her for examination, is suffering from, or is afflicted with cholera, smallpox (variola or varioloid), diphtheria, diphtheritic croup, membranous croup, scarlet fever, typhoid fever, typhus fever, yellow fever, epidemic cerebro-spinal fever, relapsing fever or leprosy, shall forthwith make report in writing, or upon blanks to be furnished for that purpose, to the health authorities of the municipality in which said person may be located, which said report shall be over his or her own signature, state the name of the disease, and the name, age and sex of the person suffering therefrom and shall also set forth by street and number, or otherwise sufficiently designate the house, room or other place in which said person may be located, together with such other information relating thereto as may be deemed important by said health authorities. In case of all of the above diseases, except typhoid fever and epidemic cerebro-spinal fever, it is provided that the health authorities may have placards giving name of disease placed on or near house, or place guards upon the premises. The duties of undertakers are prescribed by the same statute, which also provides for private funerals and advertisements stating cause of death, etc.

Dr. Jenner's Midwinter Ride in 1786.—The London *Lancet* brings to light a letter written by the immortal Jenner in January, 1786, that shows by how narrow a margin the discoverer of vaccination escaped an untimely death by cold and exposure, in which we call now-a-days a "blizzard." The letter runs as follows:

"JANUARY 3, 1786.—I was under the necessity of going from hence (Berkeley) to Kingscote. The air felt more intensely cold than I even remembered to experience it. The ground was deeply covered with snow and it blew quite a hurricane, accompanied with continual snow. Being well clothed, I did not find the cold make much impression upon me until I ascended the hills, and then I began to find myself benumbed. There was no possibility of keeping the snow from driving under my hat, so that half my face and neck was for a long time wrapped in ice. There was no retreating, and I had still two miles to go—the greatest part of the way over the highest downs in the country. As the sense of external cold increased, the heat about the stomach seemed to increase. I had the same sensation as if I had drunk a considerable quantity of wine or brandy, and my spirits rose in proportion to this sensation. I felt, as if it were, like one intoxicated, and could not forbear singing, etc. My hands at last grew extremely painful, and this distressed my spirits in some degree. When I came to the house I was unable to dismount without assistance. I was almost senseless; but I had just recollection and power enough left to prevent the servants bringing me to a fire. I was carried to the stable first, and from thence was gradually introduced to a warmer atmosphere. I could bear no greater heat than that of the stable for some time. Rubbing my hands in snow took off the pain very quickly. The parts which had been most benumbed felt for some time afterward as if they had been slightly burnt. My horse lost part of the cuticle and hair at the upper part of the neck, and also

from his ears. I had not the least inclination to take wine or any kind of refreshment. One man perished a few miles from Kingscote at the same time and from the same cause."

The comment of the *Lancet* on the foregoing is as follows: The correspondent who sent us the above extract from a letter of Edward Jenner, being a medical man, must feel, as we do, grateful that January, 1896, has not opened with the rigor of January, 1786. We print it because it paints a remarkably true and vivid picture of the alteration of sensation under the influence of extreme cold.

One hundred and twenty-five days later, on May 14, Dr. Jenner vaccinated a boy of eight years, with lymph taken from a vesicle on the hand of a dairymaid, and six weeks later he inoculated the same boy with the virus from smallpox. The experiment shows the protective influence of the lymph, and in June, 1798 an account was published of the greatest life-saving experiment the world has yet seen.

Waiver of Privilege as to Consulting Physician. On an appeal from a judgment obtained against a railway company for personal injuries, the only question involved arose upon exceptions taken by the company's counsel to the exclusion of certain evidence, offered by him, bearing upon the extent and nature of the plaintiff's injuries. About the time of the commencement of the action two physicians attended the plaintiff for the purpose of making an examination of her case. She called one of them as a witness in her behalf at the trial. His testimony tended to show that she was affected with some spinal trouble as the result of a railway accident. His opinion was based mainly upon the result of the personal examination which he made upon the occasion referred to with his associate physician. But the plaintiff did not call the other physician to testify, and the defendant company did, and propounded to him certain questions, intended to elicit his opinion as to the nature and extent of the plaintiff's injuries from his observation of her person on the occasion of the examination. These questions were all objected to as inadmissible, and the court sustained the objection. The court of appeals of New York, however, takes a different view of the matter, in a decision rendered Dec. 19, 1895, Morris vs. New York, O. & W. Ry. Co., and reverses the judgment given. First of all, it holds that the relation of physician and patient existed. Then, it declares that a construction of the statute which permits a patient who has been attended by two physicians at the same examination or consultation to call one of them as a witness to prove what took place, or what he learned, thus making public the whole interview, and still retain the right to abject to the other, is unreasonable and unjust, and should not be followed. The waiver is complete as to that consultation when one of them is used as a witness. The considerations and reasons upon which the statute was founded no longer exist when full disclosure is made by either with the consent of the patient, and every party to the transaction thus disclosed is relieved from any injunction of secrecy. The patient can not limit the scope or effect of the waiver when made any more than she can recall it. When the plaintiff in this case called one of the physicians, who disclosed the whole consultation, the law determined the legal effect of that act, irrespective of any mental reservations on her part. Upon every principle of reason and justice this act amounted to a waiver of the right to object to the testimony of the other physician, when called by the defendant, as to the same transaction. For these reasons, the court thinks that the testimony excluded was admissible, and holds as already stated.

Practical Notes.

Non-tuberculous Ulcers in Tuberculous Patients.—Claude reports two cases of ulcerous condition of the tongue in consumptives, neither of which were produced directly by the Koch bacillus. One was a granulated process, and the other caused by secondary microörganisms in the mouth of a cachectic.—*Gaz. Méd. de Paris*, February 1.

Dr. Willems of Ghent.—Our French exchanges mention the recent death of Dr. Willems of Ghent, and recall his services during the Franco-Prussian war, when he devoted himself to the care of the wounded, sharing in all the hardships and dangers of the campaigns, and only returning to his home in Belgium when incapacitated by illness.

Bite of Jackal, Probably Rabid.—One of the successful cases that fell under the treatment of the Institut Pasteur, at Paris, in 1895, was that of an Englishman, formerly resident near Calcutta, Bengal, who had been bitten by a jackal. The injured person hurriedly left India, by the advice of his physicians in Calcutta. As the bite was received while the patient was in camp, it could not be determined that the jackal was rabid, but that was the belief of the onlookers. About a year later the patient was reported to be in excellent health.

Cetrarin.—According to Kobert, cetrarin, the active principle of the *lichen islandicus*, stimulates the peristaltic action of the stomach and the bowels, increases the number of the blood corpuscles in cases where they have diminished in the course of disease, and is a general tonic for the nervous system. Cetrarin, therefore, is indicated in chlorotic, anemic cases, where there is constipation and loss of appetite. Dose prescribed: one-eleventh gram.—*Progrès Médical*, February 8.

Formalin in Disinfecting Catgut.—This journal recently noted the advantages of formalin in preserving macroscopic specimens, as it hardens and strengthens the tissues. Hlavacek now announces that it is exceptionally valuable in sterilizing catgut. It does not kill the bacteria; they emerge unharmed after soaking hours in it, and being exposed to the vapor. But it hardens the catgut so that it will stand boiling. This result is accomplished by soaking it twelve hours in a 5 per cent. solution of formalin, or three hours in a 20 per cent. solution. The catgut can then be boiled twenty minutes without injury. If then it is kept in a 1 per cent. solution of sublimate, it is always ready for use, strong and solid and absolutely sterile.—*Wiener klin. Rundschau*, February 8.

Influences of Temperature on the Digestibility of Foods.—Hayem has been experimenting with Ewald's test-meal at different temperatures, and he announces that heat, and especially cold, exert a most important influence on the chemic action of the stomach. They increase the secretion of free hydrochloric acid, and also of the gastric juice, symptoms of hyperemia of the mucous membrane and increased glandular activity. He draws the conclusions that tepid foods should be taken in hyperpeptic dyspepsia, while they should be taken cold in hypopeptic conditions. He intends to publish a series of studies on the processes of digestion at varying temperatures, and hopes that other scientists will coöperate with him in studying them, taking the Ewald test-meal for the basis of their researches.—*Wiener klin. Rundschau*, February 8.

Yersin's Plague Bacillus.—The "cocco-bacillus" stated by Yersin to be the cause of the plague can be easily cultivated on gelatinized peptone. It is pathogenic for the rat, mouse, guinea pig and rabbit. By transmissions, bacilli of fixed virulence can be obtained for one kind of animal. But it requires a series of transmissions to acquire a maximum and fixed virulence for another kind. Filtered cultures have no effect upon animals: a large amount of dead bacilli must be injected to secure inoculation. The serum of a horse immunized by intravenous injections will immunize other kinds of animals. No other serum has any effect on the development of the disease, as was demonstrated by many tests with the normal serum of the horse, the anti-diphtheria serum, Marmorek's serum, Roux's anti-tetanus serum and Calmette's anti-venom serum.—*Nord Médical*, January 15.

Treatment of Imperfect Circulation.—Bum's essay on the mechanical-gymnastic treatment of disturbances in the circulation is given at length in the *Wiener klin. Rundschau*, of February 9.

He advocates massage of the extremities and of the neck, and places great emphasis on the benefit to be derived from deep breathing, which draws the venous blood upward to the heart by means of the differences in pressure in the thoracic cavity. He insists that exercise and rest must strictly alternate. Gymnastic exercise should coincide with the systole of the heart, and be commenced with apparatus offering the least resistance. Further treatment is the shaking of the heart and the thorax, thumping on the region of the heart and spine, until the whole thorax vibrates. Also passive exercises calling the large joints into play. This treatment is contra-indicated in arterial aneurysms and sclerosis and also in degeneration of the myocardium. The best results are obtained where there is a general lack of tone in the circulation, and in hypertrophy and incipient fatty degeneration.

Treatment of Night Sweats in Phthisis.—The *Nouveaux Remèdes* gives the following prescriptions for night sweats in tuberculosis:

℞. Fowler's solution . . . . . 3 grams.
Tinct. of belladonna . . . . . 3 grams.
Water of bitter almonds . . . . . 20 grams.

Misce. Take xv–xx drops of this solution about 5 P.M.

℞. Codein . . . . . 0.5 grams.
Dist. water . . . . . 120.0 grams.
Simple syrup . . . . . 20.0 grams.
Alcohol . . . . . 10.0 grams.

Misce. Take a tablespoonful about 8 P.M.

℞. Hydrated chloral . . . . . 6 grams.
Dist. water . . . . . 100 grams.
Alcohol . . . . . 100 grams.

Misce. Rub the body with this before retiring.

Louisville Notes.

"SPOTTED FEVER."—Dr. Cashin, the State bacteriologist, in his report to the State Board of Health in regard to his visit to Edmonson County, states that in all there have been thirty-three cases, ten have died, and fifteen are now under treatment. The type of the disease is much milder now than when it first made its appearance, some six weeks ago. The first case developed in the person of a young man who had not been out of the county for months. One autopsy was made by Dr. Cashin and cultures made of cerebro-spinal fluid, the details of which are not yet complete.

Excitement is high in Wolfe County on account of a death from spotted fever. Several other cases are reported, and it is feared another outbreak such as occurred in Edmonson County will prevail.

PHARMACY LAWS.—By a recent enactment of the legislature the very comprehensive laws governing the practice of pharmacy have been made to be effective in every county of the State.

DEATH REPORT.—There were 66 deaths during the past week, 40 male and 26 female. Pneumonia caused 6 deaths. There were 8 cases of diphtheria placarded and three cases of scarlet fever.

LEGISLATIVE ACTS.—In addition to the pharmacy laws being extended the legislature appropriated $100,000 to establish two houses of reform, one for boys and one for girls. This is a much needed measure.

A favorable report was also made upon the bill to provide coroners in certain counties with stenographers.

Detroit Notes.

THE CHILDREN'S FREE HOSPITAL ASSOCIATION has just sent out its ninth annual report. The medical staff has been enlarged and is complete as follows: Medical staff: Drs. C. A. Lavendorf, L. Connor, J. K. Gailey, H. A. Cleland, D. Laferte, Justin E. Emerson. Dental surgeon: Dr. E. M. Thompson. Assistant physicians: Drs. R. A. Newman, A. P. Biddle. Consulting staff: Drs. Donald Maclean, G. E. Frothingham, C. G. Jennings. Out-door Department: Director and physician, Dr. Wm. F. Lyster. Surgeons: Drs. J. K. Gailey, D. Laferte. Assistant: Dr. W. C. Marten. Ophthalmologist: Dr. A. Turner. Neurologist: Dr. J. E. Emerson. Dermatologist: Dr. A. P. Biddle. House Physician: Dr. P. C. McEwen. In the recording secretary's report we see that there are thirty-three beds kept up by one or more individuals. The treasurer's report shows receipts for the ensuing year $7,120.40, and disbursements $6,986.31.

THE WAYNE COUNTY MEDICAL SOCIETY at its regular meeting Thursday, March 5, listened to a paper by Dr. Edward K. Bacon, entitled "Epilepsy," which was principally historical.

AT THE REGULAR MEETING of the Detroit Medical and Library Association held Monday, March 2, Dr. F. D. Summers presented a paper entitled "Pyosalpinx."

HEALTH OFFICE REPORT for week ending Feb. 29, 1896: Deaths under 5 years 35, total 78. Births: Male 56, female 44, total 100. Contagious diseases: Diphtheria, last report 12, new cases 17, recovered 6, died 3, now sick 20. Scarlet fever, last report 15, new cases 4, recovered 3, died none, now sick 16. Smallpox, last report 3, new cases 3, recovered none, died 3, now sick 3.

Health Office Report for week ending March 7, 1896: Deaths under 5 years 40, total 88. Births: Male 60, female 57, total 117. Contagious diseases: Diphtheria, last report 20, new cases 6, recovered 15, died 2, now sick 9. Scarlet fever, last report 16, new cases 5, recovered 6, died none, now sick 15. Smallpox, last report 3, new cases 2, recovered 2, died 1, now sick 2. Measles, last report none, new cases 2, recovered none, died none, now sick 2.

Washington Notes.

THE POST-GRADUATE MEDICAL SCHOOL.—The Board of Directors of the Post-Graduate School of Medicine held their first meeting on March 5, under the charter granted by Congress.

THE WOMEN'S CLINIC.—The Board of Directors of the Women's Clinic held their regular monthly meeting on the 7th inst. in their new home. Important business was transacted and the report of the staff showed the work to be steadily on the increase.

MEDICAL SOCIETY.—At the regular meeting of the Society held on the 4th inst., Dr. Barrie read an essay on the clinical symptoms of renal casts. Dr. Bishop on cerebral hemiplegia, its differential diagnosis and rational treatment. Dr. S. S. Adams reported an interesting case of convulsions in a young child; the first attack was apparently caused by a piece of glass in the stomach, and the second from two beans. Both attacks occurred within two weeks; the child recovered.

WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY.—At the meeting of the Society held on the 6th inst., Dr. Stone read an instructive paper on post-operative results in pelvic and abdominal surgery. Dr. Stone presented an appendix and a fibroid removed by abdominal section. Dr. Bovee presented a extra-uterine pregnancy with fetus successfully removed, also a tubo-ovarian cyst. Dr. J. T. Johnson reported a case of hysterectomy for fibroid. Dr. H. L. E. Johnson reported a case of cystic ovary and double salpinx successfully removed.

MEDICAL PRACTICE ACT.—The Senate District Committee has favorably reported the House Bill to regulate the practice of medicine in the District with amendment as follows: The bill is to take effect from July 1, 1896, instead of from the date of its becoming a law. The provisions as to admitting to practice physicians coming here from other States is altered to read as follows: A license to practice shall be issued "to physicians who may change their residence to the District of Columbia from any State or territory where medical laws and medical examining boards exist, the presentation of a certificate or license from a medical examining board, if found upon due inquiry to be true and genuine, being sufficient right of registration and certification under the provisions of this act."

It is provided by the Senate amendments that appeals from the board of medical supervisors to the court of appeals, instead of to the Commissioners, in all cases where the names of physicians are stricken from the register.

Cincinnati Notes.

The Mortality Report for the week gives: Membranous croup 1, diphtheria 4, measles 6, scarlet fever 1, typhoid fever 4, other zymotic diseases 7; cancer 3, phthisis 19, other constitutional diseases 4; bronchitis 2, convulsions 3, meningitis 6, heart disease 3, nephritis 2, pneumonia 11, other local diseases 28; total 120; under 5 years 40, annual rate 17.82; preceding week 147, corresponding week 1895, 123.

The Branch Hospital is at last to be used as a hospital for tubercular cases. This matter has been agitated for a long time and is undoubtedly a most excellent move. Heretofore the institution has been used for the reception of smallpox cases only and therefore was empty for years at a time. It is beautifully located about eight miles from the city on one of the highest points, and the buildings are well adapted for isolation purposes. The staff is to be selected from those members of the profession who have made this disease a careful study.

The Annual Report of the Ophthalmic Hospital shows: Admissions 2,286; in-door 107; dispensary 2,179; total dispensary attendance 10,909; average daily attendance 35; major operations 154; minor operations 218.

Dr. Prendergast, the Health Officer, is endeavoring to have the cases of contagious diseases isolated, and recommends the establishment of a hospital on the cottage plan, to be located outside the city. Each cottage is to accommodate about six or eight patients and to be limited to one disease.

The Opposition Party to the Pure Food and Dairy Laws have called attention to the fees paid and the commission during the past year, which they quote as follows: Attorneys $17,023.09; chemists $9,287.58.

A Fifty-three year old inmate of the City Infirmary died last week while at dinner as a result of a piece of meat lodging in his trachea.

The Following Internes have been appointed for the Cincinnati Hospital for the coming year: W. Hall, L. F. Palmer, Allan Ramsey, Chas. H. Williamson, Dana E. Robinson, Fred Harpold, George C. Shafer, Arthur Freericks, Frank Scheerer, Lewis A. Maloney and Chas. Meyers.

The Cincinnati College of Medicine and Surgery opened a bacteriologic course for practitioners February 9.

A Committee of Druggists from throughout the State have visited this city during the past week and solicited the aid of the medical profession in securing an amendment to the present Pure Food and Dairy law, but they met with poor success, as the physicians feel that the law is a good one and should stand, they being in probably a better position than any other class of men to appreciate the urgent necessity for the rigid enforcement of laws to prevent adulteration.

The Annual Report of the Children's Hospital shows 62 admissions in the medical ward, 126 in the surgical, 47 in the ophthalmic, and 16 in the dental; total 151. Mortality: Medical 3; surgical 2; ophthalmic and aural 1.

The Hygeia Medical College have presented a petition to Governor Bushnell asking for recognition on the Board of Medical Examiners. This is the school whose graduates Dr. Prendergast, the Health Officer, has refused to register, and the coroner in several instances has refused to recognize death certificates signed by them and has criticised their treatment.

Dr. B. F. Lyle has been appointed physician to the Branch Hospital or "Pest House," vice Dr. Geo. B. Twitchell, resigned.

Philadelphia Notes.

The Municipal Hospital.—The annual report of Dr. Wm. M. Welch, physician in charge of the Municipal Hospital (where contagious diseases only are treated) has just been submitted to the Board of Health. The number of admissions during 1895, exceeds that of any preceding year since the epidemic of smallpox in 1871-72. The increase is attributed to the recognition by the community of the fact that the health not only of the public but also of individuals is better protected by isolation in a hospital of every case of contagious disease of a dangerous character. Scarlatina and diphtheria have furnished by far the largest proportion of the cases admitted to the hospital during the last few years. The large increase in the number of patients, however, appears to be mainly due to diphtheria, the number of admissions for this disease during the last two years being greater than that of the aggregate of all other diseases. The diphtheria pavilion erected two years ago, was, during the past year, several times filled to its utmost capacity, and at the present time it is so crowded as to require two patients to occupy the same bed in more than one instance. Enlargement of this ward is urged as a necessity. Antitoxin was used in 302 cases under Dr. Welch's supervision, during the past year; 85 of these patients died making the death rate 28.14 per cent. Of the diphtheria patients who did not receive antitoxin the death rate was only 25.99 per cent. The total number of cases of diphtheria was 757.

Intra-cranial Tumors.—The special meeting of the College of Physicians was held February 19, for the discussion of the subject of Intra-cranial Tumors, Drs. S. Weir Mitchell, W. W. Keen, Wm. F. Norris and Charles K. Mills took part in the discussion.

Dr. Wm. Thomson, Professor of Ophthalmology at Jefferson College, has been chosen by the Managers of Wills Eye Hospital to fill the vacancy in the staff caused by the death of Dr. H. Earnest Goodman. Dr. Thomson was originally elected a surgeon to the Wills Hospital in 1870, but in 1877, in order to enable him to devote his attention to his clinic at the Jefferson Hospital, he was made Emeritus surgeon, and he has held this position until the present time, making twenty-six years of continuous efficient connection with the institution where he now resumes active duty upon the medical staff.

A Physicians and Surgeons' office building, ten stories high to be erected in the neighborhood of 18th and Chestnut Streets, has been planned and will probably be built during the coming year.

Filtration of the Water Supply is under consideration by City Councils and is so strongly supported by public opinion that an appropriation will doubtless be made for the purpose.

A Case of Filaria Sanguinis Hominis.—Dr. Frederick P. Henry, at the last meeting of the County Medical Society, reported the finding of this parasite in the blood of a patient at the Woman's Hospital, who had developed chyluria after labor. The patient was a white woman, who has lived in Philadelphia not quite a year. Microscopic slides were shown at the meeting, demonstrating the presence of the living embryos. Dr. Henry thought that the parasite had been originally acquired during residence in the south, and that a rupture of a lymph-vessel during the strain of labor had led to the chyluria, and this suggested examination of the blood. He referred to a former case of chyluria, which he had reported to the Society, that of a Cuban, and who had since died. At the autopsy, the abdominal lymph-channels were found distended; but neither embryonic nor mature filariæ could be detected, although he still held that the case was of this character. Cases of chyluria in which the parasite had not been discovered were also reported by Drs. Tyson, Wilson and Cohen, and it was stated that the above case of Dr. Henry's, which represented the nocturnal form of filarial manifestation, was the first one reported in this city, in which the parasite had been demonstrated.

The American Society of Superintendents of Training Schools for Nurses have just concluded a very successful and

profitable meeting in this city at which a number of interesting and practical papers were read and discussed: the annual dinner was held at the Colonnade Hotel. The officers elected were: President, Miss M. A. Nutting, of Johns Hopkins Hospital: Vice-President, Miss M. E. P. Davis, University of Pennsylvania Hospital: Secretary, Miss Dock, Cook County Hospital: Treasurer, Miss L. Drown, Boston City Hospital. Next place of meeting, Baltimore during the second week in February, 1897.

DR. DANIEL G. BRINTON is delivering a course of eight lectures, free to the public, at the Academy of Natural Sciences, on Friday afternoon, on the Scientific Study of Man. The lectures are well illustrated and are popular in style, and attract large audiences. His topics are: The Universe and Man from the Standpoint of Science: Man's Position in the Chain of Animal Life: The Origin of Man: Races and Varieties of Man: Geographic Distribution of Man: Man as a Wild and as a Domesticated Animal: The Metaphysical in Man: The Man of the Present and the Future.

THE RÖNTGEN RAYS IN SURGERY. At the meeting of the College of Physicians March 4, Drs. E. P. Davis and W. W. Keen gave a demonstration of the clinical use of Röntgen's Rays, and Prof. W. F. Magie, Ph.D., explained the technical method and physical character of the phenomena. A patient was presented who had received a gunshot wound in his forearm fifteen years ago, by a 32 caliber bullet. He applied for treatment at the Pennsylvania Hospital, where he was under the treatment of Dr. Agnew, who could not find the ball nor could Dr. Hart, who was resident surgeon at the time. The patient was a policeman but was obliged to retire from active duties on account of the wound. Lately he has had a good deal of pain in the extremity, interfering very much with the use of his hand. Dr. Hart had a photograph taken by the Röntgen process and in the negative exhibited the ball was seen to be located near the styloid process of the ulna, making the indication for operation very definite. A case of united fracture of the bones of the forearm in a young man, was presented and a photograph made at the meeting, and the negative was immediately developed, beautifully showing the lines of fracture in both the radius and ulna, and the deformity due to deflection of the ulna.

Dr. Davis, editor of the *American Journal of Medical Sciences* stated that a number of experiments had been made by direction of that journal and that the demonstration on this evening was the outcome of that work. They had found by experiments upon the cadaver that foreign bodies particularly those consisting of metal or of glass, when introduced into the tissues, could be located with tolerable certainty, and that a diagnosis between an abscess and a solid tumor could be made. Experiments made in the bacteriologic laboratory showed that the new rays have no influence in retarding the growth of bacilli. In a pregnant woman he had succeeded in obtaining a shadow picture of the fetal head, or that part of it lying above the brim of the pelvis. He thought that this method might prove useful in the diagnosis of pregnancy. Professor Magie presented the physical aspect of the subject and explained the apparatus which consisted of a dozen storage cells, a Rhumkorff coil, a Crooke's tube and the ordinary plate holder containing a sensitive photographic glass-plate which was entirely enclosed. The X rays proceed in straight lines from the Crooke's tube, and are neither reflected nor refracted: the object to be examined is placed between the tube and the plate, during exposure to the rays. Professor Magie showed an instrument consisting of a telescopic tube, at the large end of which was placed a diaphragm of opaque material saturated with a compound salt of platinum, which has the property of becoming luminous under the influence of the Röntgen's rays. With this instrument, the shadows were made visible, which in the other process were fixed by photography. As regards the nature of the phenomena, he said without hesitation that the X rays are not the ultra-violet rays of the spectrum, because they can not be reflected nor refracted. He could not accept the view that they are the ordinary cathode rays although Goldstein of Berlin holds that there are two species of cathode rays, one of which can be deflected by a magnet and the other not. It is possible that the latter are identical with Röntgen's rays. Another theory is that they are due to molecules shot off from the negative pole. There is another view, which receives support from a recent paper by Woodman in which he discusses the electro-magnetic theory of light. Röntgen has proposed the hypothesis that the rays are due to longitudinal vibrations of etherial molecules which, if found to be true will be one of the great discoveries of the century and will place its author on a par with Faraday.

Dr. Keen approved the name suggested by Dr. Cantell of skiagraphy for the Röntgen process and "skiagraphs" for the photographic results. The applications to surgery are valuable but in a limited range. Where bony walls intervened, like the pelvis or the skull, not much information could be gained, but for deformities of the bones, tumors, discolorations, fractures, it may be useful in discovering any abnormality. After the dressings are applied, you could see without disturbing the dressings, if the fracture has been properly adjusted or not. While we may not determine the existence of a stone in the bladder, on account of the surrounding pelvic bones, we may be able to detect a stone in the kidney, but a stone in the gall-bladder will scarcely be seen in this way. Needles, or pieces of glass, imbedded in the tissues of the hand for instance are readily located by this means which is a valuable aid in diagnosis in these common injuries.

THE PUBLIC SERVICES.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the ten days ended February 29, 1896.

P. A. Surgeon G. T. Vaughan, leave of absence for seven days granted Feb. 17, 1896, revoked Feb. 27, 1896.

P. A. Surgeon G. M. Guiteras, directed to proceed on March 25, 1896, from Gulf Quarantine Station to Key West, Fla., and assume command of Service, Feb. 27, 1896.

P. A. Surgeon A. C. Smith, to proceed from Memphis, Tenn., to Gulf Quarantine for duty, Feb. 25, 1896.

P. A. Surgeon G. B. Young, when relieved at Key West, Fla., to proceed to Memphis, Tenn., and assume command of Service, Feb. 27, 1896.

Asst. Surgeon H. W. Wickes, to assume temporary command of Service at Memphis, Tenn. Upon being relieved to rejoin station at New Orleans, La., Feb. 24, 1896.

Change of Address.

Brenner, F. T., from 514 Maine St., to 700 Maine St., Quincy, Ill.
Hall, W. W., from Thomasville, Ga., to Springfield, Ohio; Hildreth, M. L., Sioux City, Iowa, to Lyons, Neb.
Sims, S. N., from St. Joseph to 310½ Hazel St., Danville, Ill.; Sutton, E. M., from Canton to Rooms 11 and 12, Masonic Temple, Peoria, Ill.
Wenton, H. N., from 922 Sutler St. to 406 Sutler St., San Francisco, Cal.

LETTERS RECEIVED.

Allport, Frank, Minneapolis, Minn.; Alexander, L. C., (Miss) Philadelphia, Pa.; Alta Pharmacal Co., St. Louis, Mo.
Burlingame, D. E., Elgin, Ill.; Bulette, W. W., Pueblo, Colo.; Brown, F. F., Advertising Agency, New York, N. Y.; Bailey, H. L., Washington, D. C.; Bulson, A. E., Jr., Fort Wayne, Ind.
Crothers, T. D., Hartford, Conn.; Chaddock, C. G., St. Louis, Mo.; Cobleigh, C. A., Chattanooga, Tenn.; Carveth, J. A. & Co., Toronto, Ont.; Chase, Arthur H., Concord, N. H.; Cullen, G. L., Cincinnati, Ohio; Chaffee, Geo., Brooklyn, N. Y.; Carter, Geo. T., New York, N. Y.
Dallas, Alexander, Bayonne City, N. J.; Daniel, Jos. A., Davenport, Iowa; Dougherty, G. F., Neogo, Ill.; Donovan, Jno. A., Gagetown, Mich; Davis, G. W., San Francisco, Cal.
Evans, J. R., Troy, Ohio; Eckelman, F. C., Elkhart, Ind.
Fairgrieve, G. W., North Enid, O. T.
Garcelon, A., Lewiston, Me.; Gayden, A., Jackson, La.
Hummel, A. L., Advertising Agency, (3) New York, N. Y.; Hektoen, L., Chicago, Ill.
Johnson & Emigh, San Francisco, Cal.
Laughlin, John, Rantoul, Ill.; Linjer, O. E., Starbuck, Minn.
McShane, J. T., Indianapolis, Ind.; Morris, D. W., Birmingham, Ala.; McLeod, Jas. H., St. Louis, Mo.; Musgrove, Thos. W., Puyallup, Wash.; Moyer, Harold N., Chicago, Ill.
Opie, Thomas, Baltimore, Md.
Publisher's Collection Agency, St. Paul, Minn.
Raymond, K. K., Evanston, Ill.; Reed & Carnrick, New York, N. Y.; Rochelle, W. F., Jackson, Tenn.
Scott, X. C., Cleveland, Ohio; Smith, C. J., Pendleton, Ore.; Sykes, G. A., New York, N. Y.; Smith Chas. W., Toledo, O.; Stuver, E., Rawlings, Wyo.; Stewart, F. E., Detroit, Mich.
Tomlinson, P. W., Wilmington, Del.; Twilley, W. S., Baltimore, Md.
Vetter, J. C. & Co., New York, N. Y.
Weaver, Geo. H., Chicago, Ill.; Whitford, Wm., Chicago, Ill.
Yingling, J., Baltimore, Md.